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Vesa Vihriälä, Bengt Holmström, Sixten Korkman, Roope Uusitalo

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Economic policy strategy in the context of the interest rate crisis

Vesa Vihriälä, Bengt Holmström, Sixten Korkman, Roope Uusitalo

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<p>Summary</p> <p>The report presents an assessment of the effects of the interest rate crisis and the measures that can be taken to reduce the damage caused to the Finnish economy and restore Finland to a path of sustainable growth, high employment and sustainable public finances.</p> <p>The Finnish economy is in a deep recession with the interest rate crisis. It is important to prepare for developments reminiscent of the post-2008 financial crisis. In addition to the loss of production, income and work, the crisis is causing a deterioration in health and well-being now and in the future. The problems stem from both the restrictions imposed to contain the epidemic and the fear. Removing these is a condition for economic recovery. However, this must be done safely, which requires a strong investment in testing and various protective measures.</p> <p>The first task of economic policy is to reduce the immediate harm that restrictive measures and fear cause, above all, to the ability of the business sector to function. A significant stimulus contribution is needed to start growth after easing restrictions. The most demanding phase of economic policy will come after this. The crisis will lead to an unsustainable trajectory of public debt in the next few years. The minimum requirement is to halt the growth of the debt-to-GDP ratio, which requires a tight adjustment of public finances. The need to cut spending and raise taxes can be mitigated by structural policies. Therefore, when deciding on stimulus measures, the government should decide on the objectives of the necessary "pain package" and determine the process for the completion and vigorous implementation of the measures.</p>			
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Referat	<p>I reported that the coronary crisis has been affected and the genome has been affected by the Finnish economy.</p> <p>The Finnish economy is undergoing a recession in the coronary arteries. This is the case for the following years after the end of the financial year 2008. The period of production, incineration and use of the commercial plant has been reduced to a period of time and on the basis of the price. Restrictions have been identified as a result of the epidemic and the situation. In this case, there is no need to pay for the economy. Detta måste dock ske på ett säkert sätt, vilket kräver Starka satsningar på testning och olika skyddsåtgärder.</p> <p>For the purposes of this Regulation, the economic policy of the Member States may be limited to restrictions on the use of certain functions in the field. After this, the restraining effect is determined by the stimulation of the stimulus. This measure is intended to apply to the financial policy of the company. Krisen leder till ohållbar skuldsättning inom den offentliga ekonomin redan under de närmaste åren. The minimum amount of aid will not be limited to the current financial quota, which will be limited to the financing of non-financial institutions. Behovet av att minska utgifterna och höja skatterna kan lättas med hjälp av strukturpolitik. Regarding this, the sampler can be used as a stimulant in the form of a "smear package" in which it is used and fastened in the process of determining the value of the trigger and the net.</p>	
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Foreword by the authors

On 30 March, the Ministry of Employment and the Economy and the Ministry of Finance gave us. to prepare an expert assessment of the effects of the interest rate crisis and measures to repair and restore the damage to the Finnish economy to Finland's path to sustainable growth, high employment and sustainable public finances.

The task has proved to be demanding, especially because the crisis is very exceptional in nature and its development is as uncertain as possible. It follows that conclusions can only be preliminary and conditional, and policy recommendations general.

In general, our work has only been possible because we have received excellent support from the ministries that commissioned it, the Bank of Finland, the National Institute for Health and Welfare, Industry Investment, the Finnish Competition and Consumer Authority and many private sector actors. University researchers and other experts have generously answered our questions and produced background notes. Some of the memoranda are published as annexes to the report. They are analyzes by the authors that we have taken advantage of but not commented on. We have worked closely with the Helsinki Graduate School of Economics' crisis analysis research team. Financial Adviser Jenni Pääkkönen from the Ministry of Finance has been an excellent support to us throughout our work. A warm thank you to everyone who helped us, even though we can't name everyone by name.

In the course of our work, we have reported interim results on issues of business support and deregulation to client ministries. In this report, we have compiled our overall view of the interest rate crisis and the policy needs it has created.

Helsinki, 7 May 2020

Vesa Vihriälä Bengt Holmström Sixten Korkman Roope Uusitalo

Finland's economic strategy in the interest rate crisis: summary

Exceptional crisis

The corona pandemic has paralyzed the global economy in an exceptional way. Whereas before the crisis the world economy was estimated to grow by about 3% this year, it is now estimated to shrink by at least the same amount. This situation is very exceptional. For example, during the global financial crisis (2007-2009), the world economy did not contract in any year.

The fact that the crisis is coming from outside the economy will, in principle, make it possible to recover quickly from the crisis, as long as the coronavirus is brought under control. However, for two reasons, this is no longer likely. First, on the basis of the information available, the risk of serious illness caused by the virus cannot be eliminated in the coming months in a way that would allow a rapid return to a normal economic life.

Second, the shock caused by the coronavirus has set in motion processes that will weaken the economic development of vulnerable countries in particular for a long time to come. Poor commodity-producing countries are suffering from a collapse in commodity prices and major problems due to a deficient health care system. In Europe, the ability of heavily indebted countries to prevent the multiplier effects of a shock is weak and there is a real risk of a recurrence of a phenomenon such as the euro crisis.

Restrictive actions and fear slow down activity and cause many other disadvantages

The economic impact of the crisis stems, on the one hand, from restrictions on people's interaction and economic activity around the world, such as bans on gatherings, travel bans, cultural, sporting and other events, closures of schools, restaurants and, in many countries, shops, and even curfews. Often, recommendations also work like prohibitions. In addition, regardless of restrictions, people fear infections and therefore avoid using services in a way that reduces private consumption and deepens the crisis.

The crisis has primarily weakened the situation in the services sector. When the service sector is very labor-intensive, record-breaking layoffs and redundancies have resulted. On the other hand, global supply chains have also been disrupted, which has made it more difficult

to some extent industrial activity. However, the weakening of industrial activity is mainly only ahead when weakening demand hits it.

Finland is no exception. In Finland, too, the largest losses in turnover and reductions in the workforce concern the service sector, especially the tourism and restaurant sector. However, the differences between companies are large. In all industries, there are companies whose turnover has continued to grow and at the same time companies whose turnover has lost more than half.

In addition to the loss of production, income and employment, the crisis is causing many other disadvantages, most of which are linked to restrictions imposed by the authorities. Non-urgent illnesses go untreated, mental health, substance abuse and domestic violence problems increase, as does the loneliness and functional impairment of isolated elderly people. When children do not enter early childhood education or school, learning slows down. Particularly serious disadvantages arise for children who do not receive adequate support in their homes. The long-term disadvantages associated with school closure are great.

Companies and workers bring over the winter

The first task of economic policy is to reduce the immediate damage caused by the epidemic and the restrictions put in place to curb it. In many countries, this means securing the livelihoods of the unemployed. In Finland, as in other countries with good safety nets, the existing unemployment security system takes reasonable care of the livelihood of the unemployed.

In Finland and the comparator countries, economic policy measures have focused on maintaining the operating conditions of the business sector. Without the support of society, a significant proportion of previously profitable companies can be expected to collapse, destroying the “organizational capital” committed to them. Also, the ability of companies that survive but lose a lot of capital and have to lay off staff to respond to the improving demand and the ability to invest will weaken.

Central banks have provided ample liquidity to the market. For their part, states have created or expanded special funding arrangements. In Finland, liquidity support has been channeled mainly through the Bank of Finland and Finnvera. In addition, companies have been given more payment time, e.g. payment of employer contributions and VAT.

So far, direct support has been granted mainly through Business Finland, ELY centers and municipalities. In addition, Industry Investment has launched a private equity program and the state has announced that it will recapitalize its mainly owned Finnair. It has been decided on its own support program for the restaurants.

The implemented support solutions have been useful. However, we do not think that they are enough. What is needed is a more general system that quickly supports the profitability of companies in all industries. The purpose of the aid is to prevent bankruptcies by distributing temporary direct aid to the companies most affected by the corona epidemic.

According to the proposal, the aid would be targeted at covering costs that are difficult for small and medium-sized enterprises to adapt without going out of business. The support would also be based in part on the wage costs of companies and thus seek to maintain employment during the crisis. This proposal is discussed in more detail in Chapter 3 and Annex 10.

The compulsion to ease restrictions and the difficulty of a wise strategy

Curbing the pandemic has called for strict restrictions on civil liberties. Thanks to these restrictions, the epidemic has been halted. At the same time, restrictions cause significant harm to both people's daily lives and the way companies operate. Efforts must therefore be made to lift the restrictions as soon as possible.

There are two main lines of action to curb the pandemic. The second is based on the so-called. utilization of herd protection. If the spread of the virus to the entire population cannot be prevented, the best strategy is only to slow down the epidemic so that the capacity of the health care system is not exceeded. This was initially e.g. British strategy. At present, it is mainly followed by Sweden.

Another approach is to press the rate of spread of the epidemic (infection factor R_0) with severe containment measures so low ($R_0 \ll 1$) that the epidemic will disappear before the containment measures are in place for a long time and the restrictions can be abandoned. However, in an open society, maintaining such strict restrictions is unrealistic. If the suppression of the virus is not successful in the whole world, the complete suppression of the virus would require e.g. permanent restriction of entry.

The strategy chosen by the Finnish government is based on restrictions that prevent the exponential progression of the epidemic ($R_0 \approx 1$). However, the restrictions cause significant harm to the economy and people's daily lives. For this reason, it makes sense to seek to replace the most harmful restrictions with less harmful protection measures and a testing, tracing, isolation and treatment strategy.

In our opinion, the hybrid strategy described above (although the name is not very appropriate) is justified in Finnish conditions. The strategy should be complemented by effective safeguards to ensure a safe return to work and normal life, as well as

further increasing testing and tracing capacity. The path chosen by Finland can be expected to lead to significantly lower coronary mortality than the Swedish strategy, provided that effective treatments and / or vaccines are available before the Swedish strategy provides adequate herd protection.

The mitigation of individual restrictions requires an assessment of both the health risks associated with their removal and the economic and other benefits obtained. This will inevitably have to be done on the basis of very incomplete information. There is very little actual research data on the effects of the restrictions on the development of the epidemic, nor on the economic significance of the restrictions.

The crisis will continue for a long time to come. Even in the optimistic scenario, it will take at least another year to develop the vaccine. Under the current scenarios, the necessary immunity will not be available and some restrictions and safeguards will have to be maintained for a long time to control the epidemic.

The Finnish economy is being hit hard

Corona shock also marks a serious recession in Finland. Uncertainty about the depth and duration of the recession is high. Some degree of restrictive measures will have to be maintained both in Finland and elsewhere for a relatively long time. Uncertainty about the epidemic and economic development will not dissipate quickly. Even massive policy measures will not be able to completely prevent the multiplier effects of the shock.

From the point of view of the Finnish economy, the direction of economic development in the euro area is essential. In the light of current knowledge, economic growth will remain subdued for a long time in many countries. We do not expect Europe to find itself in a situation like the euro crisis, but there is a risk.

In any case, the interest rate crisis means changes in the structure of consumption and production, even though their details are obscured. Tourism incl. cruise tourism can be expected to develop poorly. On the other hand, services based on digital technology will gain additional momentum from the crisis. Demand for technology solutions that are important for climate policy may also increase significantly.

We estimate that production and employment will decline from their previous growth trajectories for a longer period of time. How long and deep the dip will be is uncertain. The long recession after 2008 shows that output and employment may lag behind previously estimated potential output employment paths for years. One cannot rely on the level of employment and productivity to reach his old career in the foreseeable future. Such a new 'lost decade'

policies that significantly strengthen economic growth are needed to avoid significant developments.

Public finances on a career of unsustainable indebtedness

The economic outlook described above implies a significant deterioration in public finances not only this year but for a long time to come. Public debt is growing rapidly and we estimate that, at best, it will reach 90% of GDP by the end of the decade, unless remedial action is taken. However, it is entirely possible that without policy action, the debt would exceed 100%.

An increase in the debt ratio to as high as 90% is not in itself an overwhelming problem if interest rates can be expected to remain low. There are strong grounds for this assumption, given the economic outlook for the euro area as a whole. Despite the low interest rates in the next few years, the 90% debt level makes Finland more vulnerable to new shocks; additional indebtedness from this level may not be easy in the future and debt management may become costly.

An even more serious problem, however, is that without policy action, debt growth will not see an end, even in the 2030s. This means not only a further increase in vulnerability, but also a further increase in Finland's already large long-term sustainability deficit.

For these reasons, we believe that it is clear that the debt trend in sight is unacceptable. The minimum requirement is that the debt ratio be stabilized in the coming decade.

The three elements of economic strategy

The economic policy of the corona crisis can be divided into three phases: (1) minimizing damage while getting the epidemic under control, especially by supporting companies, (2) demand-side fiscal policies after deregulation, and (3) repairing economic damage and stabilizing public finances once the economy has recovered. .

The most difficult of these is the third stage, as it requires a "scarcity sharing" by cutting spending and raising taxes, as well as some unpopular structural reforms. The scale is demanding but not overwhelming, and the experience of the crisis can help to reach a consensus on how to take the necessary action.

The need for business support is changing

There is a good case for supporting the liquidity and profitability of the corporate sector in the current phase of the crisis. However, business cannot be based on the continuation of the support measures now being implemented. In addition to being impossible for public finances, it would severely distort the functioning of the economy.

If the crisis eases in the coming months, temporary support measures can be abandoned, at least mainly by the autumn, without the need for new measures. Rather, as part of the future adjustment of public finances, ways must be sought to reduce business subsidies.

If, on the other hand, the crisis persists, the support strategy will require a more thorough reassessment. In such a situation, the initial idea may cause as many of the companies, mainly in the domestic sector, operating as possible to overcome the acute crisis.

However, even in such a situation, it is important to ensure the survival of the most valuable parts of the corporate sector, ie high-tech export companies with a lot of organizational capital. The direct support instruments currently in place are not suitable for this, with a few exceptions. A new strategy and tools are needed.

The key question is which companies need to be rescued, even with the support of society, over a protracted crisis. At the same time, it is clear that non-diversified private equity instruments that provide the State with a share of the future income of the rescued companies are unlikely to be eligible for aid. We propose that a new group of experts be set up to consider both the continuation of existing support and, in particular, the need to develop a strategy for financial support for companies.

Rebooting needs recovery to support it

The removal of economic constraints will not automatically trigger a pick-up in economic activity. In the face of sluggish domestic demand and a weak export outlook, there is a need for a fiscal stimulus to ensure that domestic demand turns to activity-friendly growth. The first requirement for fiscal policy is that the so-called automatic stabilizers are allowed to operate even after the acute phase of the epidemic. In addition, as the crisis eases, there is a need to complement the operation of automatic stabilizers with a policy-driven policy.

With this in mind, the 2021 budget must be significantly stimulating in nature. Some stimulus measures may be considered as early as the end of the summer, provided that sufficient progress is made in removing restrictions. In any case, state support for municipalities is already needed

during the current year due to both the reduction in the tax collection of municipalities and the pressure on their services.

It is vital that the stimulus policy aims to strengthen economic performance. This is not in favor of a general reduction in taxation or an increase in income transfers and benefits. Instead, efforts must be made to invest in a way that, over time, increases the productive capacity of the economy and the drive for growth.

Luontevia kohteita ovat investoinnit yhteiskunnan perusrakenteeseen ("infra"), jotka tukevat taloutta lisäämällä kysyntää lyhyellä aikavälillä ja vahvistamalla talouden suorituskykyä ja tuottavuutta pitkällä aikavälillä. Kyse voi olla tie- tai ratahankkeista tai esim. asuntorakentamisen lisäämisestä kasvukeskusten asuntopulan helpottamiseksi. Myös investoinnit ympäristö- ja ilmastopoliitikan edistämiseen sekä energiatehokkuuden lisäämiseen ovat harkinnan arvoisia. Olennaista on, että valitut "vihreän elvytyksen" toimet ovat vaikuttavia ja siten käynnistettäviä, että ne tukevat talouden toimintaa kohtuullisen nopeasti.

In any case, it is also justified to prioritize the additions deemed necessary to strengthen the level of knowledge, research and the promotion of innovation. However, such solutions need to fit into tight spending frameworks for a longer period of time.

Consolidating public finances requires a big "pain package"

The crisis is impoverishing Finland and significantly weakening Finland's public finances in the medium term. The sustainability gap in public finances, driven ultimately by an aging population, continues to widen. It is therefore necessary to adjust public finances to clearly match the carrying capacity of the economy than was estimated before the crisis. In practice, adjustment means reducing spending and / or tightening taxation.

The magnitude of the need for adjustment is uncertain. However, with unchanged economic structures, it is justified to set its minimum size at 3-4% of GDP. This would probably be enough to stabilize the public debt-to-GDP ratio below 90% in the 2020s and possibly lead to a slight decline in indebtedness. The adjustment would reduce the long-term sustainability gap by a corresponding amount, but would not be sufficient to eliminate it. Even after such an adjustment, public finances would be clearly more vulnerable to future blind people.

The need for adjustment will be reduced if structural policies are able to increase the carrying capacity of the economy, ie if the share of the working population in the population increases and labor productivity improves. From the point of view of public finances, the employment rate and the efficiency of publicly funded service production are particularly important. In any case, such a structural policy is needed in order to avoid the prospect of weak economic growth in the longer term.

The challenge of such a policy is that it is slow at best. There is also the problem that unrealistic structural plans can be used as an excuse to avoid unpopular spending cuts or tax increases. For these reasons, it is important that to improve the carrying capacity of the economy, incl. measures to improve public sector efficiency are clearly outlined and are being implemented swiftly.

The necessary policy package is to come up with a big "pain package". No spending and tax decisions or structural policy decisions are easy.

The means must be sought mainly from among the things known

The means available to raise employment rates or productivity have not changed with the crisis. Likewise, the uncertainty about the effects remains. The perception of the effects of spending cuts and tax increases on different groups of people has not changed either.

Instead, the need to balance public finances in a way that is consistent with the sustainability of the national economy has grown significantly. This also means an increased need to be able to decide on policies rather than postponing decision-making. When the problem is big and gets worse over time, you need to be able to make decisions with the understanding that there may soon be a need to change them as more information accumulates.

There is no shortage of proposals for measures to improve economic efficiency and the sustainability of public finances. The Ministry of Finance, the Bank of Finland, the OECD, the IMF, the EU Commission and the Economic Policy Assessment Council, among others, have repeatedly put forward various proposals aimed at raising employment rates, increasing productivity and, in particular, increasing the efficiency of the public sector.

A good result requires careful preparation, where economic efficiency is just one aspect. At least as important is that the whole is perceived as fair.

Finland will survive this as well

In international comparisons, Finland has been found to be one of the most functioning societies in the world. Citizens trust each other and state institutions. The administration operates efficiently and equitably. Finland is highly regarded as an innovative information society.

We have evidence of the ability to cope with the big blind. The Civil War, World War II, and the recession of the 1990s have been serious crises that have finally emerged amazingly well.

The coronary crisis is a dramatic deviation from normal. Policy makers have had to resort to exceptional measures to control the epidemic and protect businesses and citizens. Individuals, companies and other communities have been proactive and have shown great innovation to solve problems. In terms of getting the epidemic under control, the results are excellent. The next steps are not easy. However, in the light of past achievements, success should not be overwhelming.

1 Starting point

During the spring, the pandemic has progressed dramatically, forcing restrictions around the world that are hampering economic activity to prevent the epidemic from spreading rapidly. In terms of the economy, there may be the worst decline in output in the world since the recession of the 1930s. The wider problems of society are serious and will be exacerbated as the crisis continues. It is likely that the crisis will not be quickly bypassed. The painful situation forces us to seek answers to several difficult questions.

Abrupt removal of the restrictions put in place to curb the epidemic would quite soon lead to the spread of infections in a way that is unsustainable for healthcare. On the other hand, the current restrictions cannot be continued for very long without causing unreasonable problems for the national economy and the public sector, and ultimately also for the health care system and the well-being of citizens. It is therefore necessary to seek a strategy that sets out the order and timetable for easing or removing restrictions and the accompanying measures. Finland is now at the beginning of this path.

The role of economic policy is to limit the social damage caused by a pandemic. This means, as a first step, measures to maintain the liquidity of companies and support their profitability. This is necessary to alleviate the cycle of bankruptcy and unemployment and to allow companies to “hibernate” beyond the most difficult phase of the crisis. In addition, the livelihood of households and the ability of municipalities to function must be safeguarded.

This first phase of economic policy is not over yet. As long as there is a threat of a pandemic, some restrictions must be maintained. Fear of infections, regardless of restrictions, undermines economic activity. If the crisis phase continues for a long time, it will be necessary to re-evaluate the content of wintering measures.

In the second stage, once the restrictions have been sufficiently removed, efforts must be made to ensure the resumption of economic activity. With these prospects, this will require a fiscal stimulus to boost domestic demand. From Finland's point of view, it would be desirable for as many EU countries as possible to pursue a stimulative fiscal policy. The European Central Bank's chances of economic recovery from monetary policy are quite limited.

In the third phase, steps must be taken to stem public debt. In this respect, it is not only a question of the increase in debt inherited from the crisis and the stimulus policy, but also of the fact that Finland already had a significant deficit in the sustainability of public finances before the crisis. The aging population is putting continued pressure on age-related public expenditure growth and widening financial deficits.

Adjusting the fiscal stimulus and public finances to halt indebtedness requires a balance between conflicting objectives. In times of crisis, government indebtedness is inevitable and in conditions of low government borrowing, the debt burden remains limited. Over time, however, the debt cycle must be stopped in order to safeguard Finland's creditworthiness and reduce future risks. This is a demanding task. However, reforms that increase the share of the employed population in the population and improve economic productivity can alleviate the problem.

The pandemic has caused an economic crisis, but so far financial markets have remained stable. However, the situation may change. Southern European countries have been particularly hard hit by the consequences of the pandemic. For these countries, bankruptcies and credit losses can jeopardize the solvency of banks, which have already been gnawed at by non-performing loans. In particular, the high level of indebtedness of the Italian government increases the country's vulnerability to financial market developments. The escalating banking crisis in Europe would be a very big problem for Europe as a whole, both economically and politically. However, this report assumes that the European Central Bank and other authorities will be able to safeguard the stability of the European financial system.

The crisis is putting the Finnish political system and society as a whole to the test. However, there is reason to have confidence in the future, as Finnish society has a strong value base and functioning institutions, and thanks to them, good crisis resilience.

2 Epidemic development, restrictive measures and economic reaction

Regulatory regulations and recommendations introduced to curb the coronavirus epidemic, as well as behavioral changes due to fear of infection, have slowed the epidemic so that the number of cases has started to decline. The lifting of restrictions is likely to lead to an increase in the number of cases. The impact of individual restrictions is difficult to assess, but gathering restrictions in particular are likely to have a major impact on the progression of the epidemic.

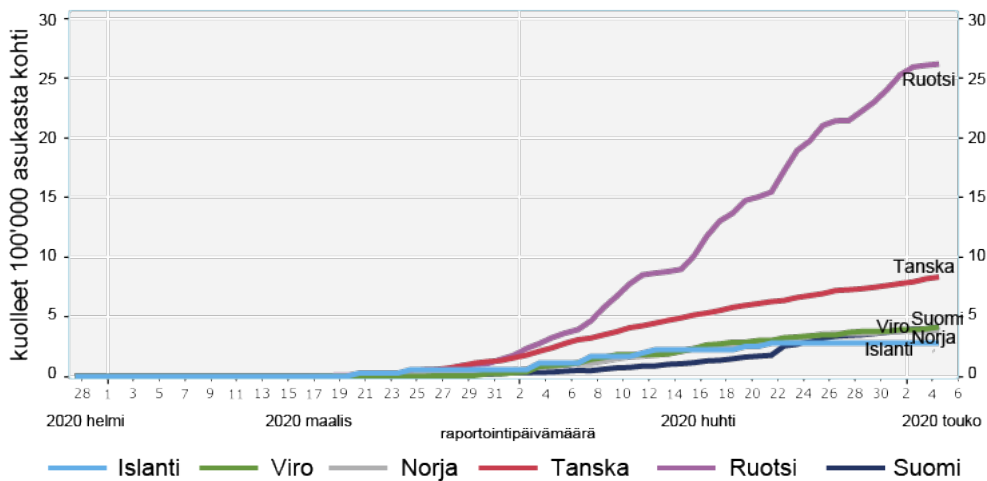
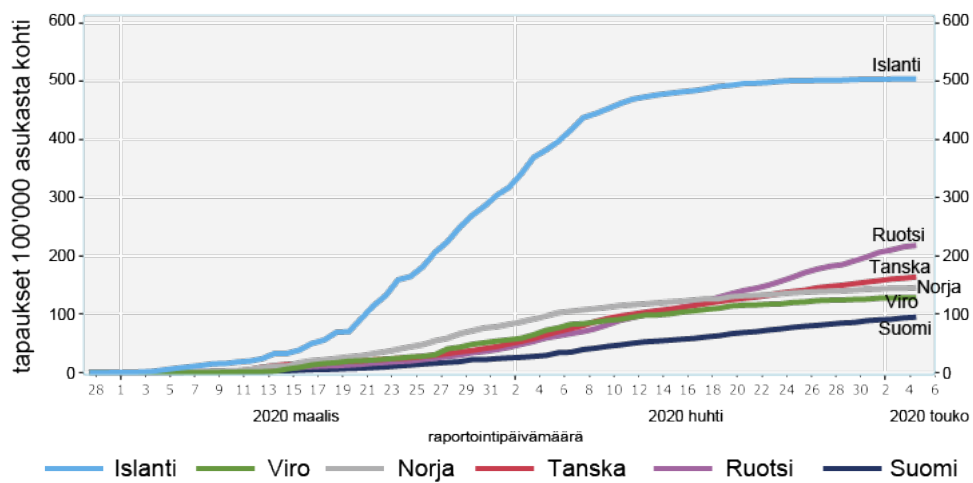
The epidemic and the restrictions imposed to combat it have led to a collapse in sales in many areas. The accommodation and catering sector has suffered the most, but the drop in sales is almost the same in many other service sectors. On the other hand, there are large differences between companies; in a significant number of companies in the service sector, invoicing has increased compared to the previous year. In industry and construction, for example, sales have fallen only slightly and major problems remain. The fall in demand is due to changes in the behavior that added to the restrictions, and the removal of the restrictions is therefore unlikely to restore demand to pre-crisis levels before the risk of infection decreases and consumers dare to use services as before.

2.1 Development of the epidemic situation

The epidemic caused by the coronavirus hit Finland later than in the other Nordic countries. So far, the epidemic has also progressed more slowly in Finland than in most European control countries. In Finland, the epidemic is concentrated in Uusimaa.

The comparison of the number of confirmed infections at different time points or between different countries depends essentially on testing practices and is therefore not entirely reliable. A comparison of the number of patients requiring hospitalization or deaths from the disease provides a more reliable picture of the spread of the epidemic. According to these comparisons, the spread of the epidemic in Finland is clearly slower than in neighboring countries.

Uncontrolled, the coronavirus epidemic spreads in the population at an exponential rate until a sufficiently large proportion of the population has contracted the disease and acquired immunity to the disease. However, since the beginning of April, the rate of spread of the epidemic has slowed down due to regulations and recommendations from the authorities and changes in human behavior. This is also reflected in the small delay in the number of patients requiring hospitalization, which peaked between 4 and 14 April, depending on the region. and has since declined across the country (Figure 2.1.).



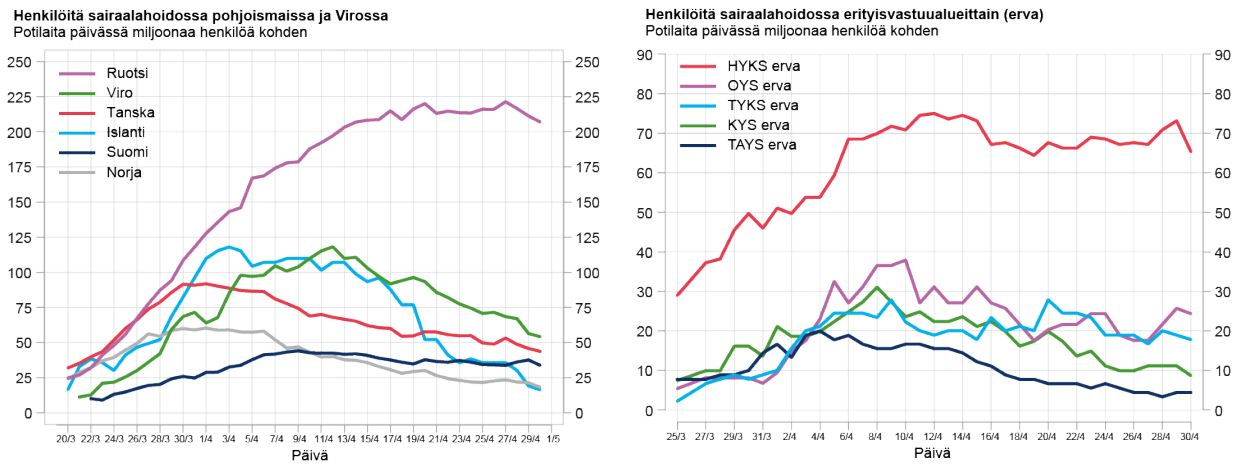


Figure 2.1. Development of the epidemic in Finland and neighboring countries ¹

The evolution of an epidemic is usually modeled using simple mathematical models. In the model, susceptible individuals are more likely to become infected after contact with those infected. Some of those infected are asymptomatic. Some of those infected have severe symptoms and need hospitalization and some of those in hospital need intensive care. Those who recover from the disease become immune to the disease and, according to current knowledge, do not get sick again.

To date, the main use of epidemic models has been to assess the adequacy of intensive care capacity. The epidemic is spreading at an accelerating rate in the population until a sufficiently large proportion of the population becomes immune to the disease, either after the disease has occurred or as a result of a vaccine. After this, the spread of the disease begins to slow down.

If spread freely, the epidemic would increase the number of patients requiring medical and intensive care so rapidly and to such an extent that intensive care capacity would not be sufficient. The aim of slowing down the epidemic has been to reduce the need for capacity at the peak of the epidemic so that the number of patients remains within the capacity of intensive care. At the same time, however, the duration of the epidemic will be significantly extended.

The epidemic model is a system of differential equations whose dynamics depend on infectivity (R_0) and the rate of recovery of those infected. Infectivity of the virus again

¹ sources: <https://thl.fi/fi/web/infektiotaudit-ja-rokotukset/ajankohtaista/ajanhtista-koronavirus-covid-19/tilannekatsaus-koronavirus>

depends on the number of contacts and the likelihood of getting infected from the contact. The number of contacts can be influenced by social isolation policies and the likelihood of infection through protection and hygiene.

Parameters related to the development of the epidemic have been estimated in numerous studies based in particular on the rate of spread of the disease, first in China and later in Europe. At the moment, the material needed to estimate the model is starting to be sufficient in Finland as well.

The parametric estimates of the model are still subject to significant uncertainty, particularly in relation to the proportion of the population that is infected with asymptomatic patients and, at the same time, already immune to the disease. Uncertainty about these parameters also leads to uncertain estimates of disease infectivity as well as mortality from infections. The parameter estimates of the model are also different in different population groups and change due to constraints aimed at reducing contacts.

Based on the model, THL makes predictions about the progress of the epidemic. THL has not published all the parameters of the model it uses, making it difficult to replicate the calculations in detail. THL and STM's modeling group 21.4. a dated scenario has been available at the time of writing this report. According to THL's calculations, the communicability of the epidemic has decreased significantly from its baseline ($R_0 = 2.4$). One infected person will infect less than one new person ($R_0 < 1$), which means that the progression of the epidemic will slow down.

The slowdown in the epidemic means that the capacity of health care is sufficient to treat well-sick people. At the same time, this means that the population has not had time to develop immunity against the coronavirus. If deregulation leads to an increase in infectivity, the epidemic will begin to spread again at an exponential rate. The complete lifting of restrictions in mid-May would accelerate the epidemic, according to THL calculations, in a way where the need for intensive care would exceed the capacity for intensive care in less than two months. A more cautious easing of restrictions will keep the epidemic under control in a way where the capacity for intensive care is sufficient, but where a significant proportion of Finns still fall ill.

In the THL scenario calculations (Figure 2.2.), The constraints are relaxed so that the infectivity is below a quarter ($R_0 = 1.8$) or a third ($R_0 = 1.6$) of the baseline ($R_0 = 2.4$). However, in order for the intensive care capacity to withstand the acceleration of the epidemic due to the easing of restrictions, these milder restrictions need to be maintained for a further four ($R_0 = 1.8$) or five ($R_0 = 1.6$) months from mid-May onwards. In both scenarios, the epidemic is still accelerating, with more than 200 patients in intensive care at the same time.

With the help of permanent restrictions ($R_0 = 1.2$), the epidemic would subside within about a year, but e.g. the isolation of at-risk groups and travel restrictions should be maintained for several years. The THL also warns that in this most restrictive scenario, a new wave of epidemics is very likely, as without herd protection, 85% of the population will remain exposed to the infection.

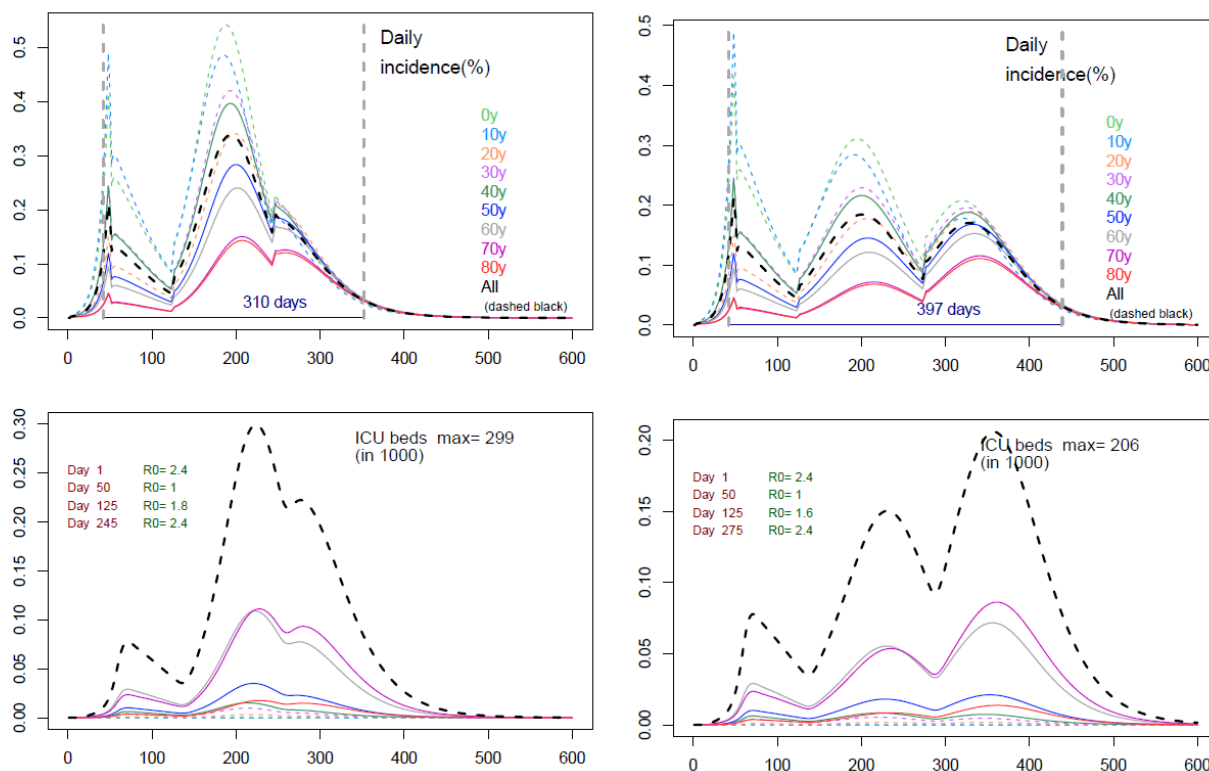


Figure 2.2. THL corona modeling team scenarios for the number of new infections (top images) and the daily need for intensive care (bottom images) if restrictions are loosened in mid-May so that $R_0 = 1.8$ (images on the left) or $R_0 = 1.6$ (images on the right).²

Thus, according to the THL scenarios, the epidemic will accelerate after the restrictions are relaxed. The number of infections is starting to increase as the proportion of the population immune to the disease remains low at the time of easing restrictions. At the same time, the number of people receiving severe symptoms is increasing, even if this is still within the limits of healthcare capacity, according to THL's calculations. In scenarios where restrictions are lifted faster for new ones

² Source: Exit and Reconstruction Working Group 1st Report: The Impact of the Coronary Crisis and the Plan for a Hybrid Strategy for Epidemic Management, VNK Publications 2020: 12 <http://urn.fi/URN:ISBN:978-952-287-894-6>

the number of infections is growing rapidly. At the same time, the need to reintroduce restrictions is likely to increase.

However, even in scenarios where restrictions are opened more cautiously, the epidemic accelerates and the number of patients requiring medical treatment increases as long as the “effective infectivity rate,” that is, the product of the infectivity rate and the susceptible population, exceeds one. The epidemic would slow down if there were enough immunity to the virus. However, serological studies of THL show that immunity is still low, which in practice means that herd protection does not yet significantly slow the progression of the epidemic. If the population is immune to the disease, the epidemic will start to accelerate even after the restrictions have been relaxed, even in the most severe scenarios published in the Exit and Reconstruction Task Force report, where the infectivity rate increases from one to $R_0 = 1.2$. In this scenario, the epidemic would only start to slow down when the proportion of the population immune to the virus exceeded 17%. According to the latest THL population tests, immunity was many orders of magnitude lower, about 0.6%.

2.2 Introduced to curb the epidemic restrictions in Finland and neighboring countries

In most countries, restrictions on free movement were introduced in week 12, from 16 to 20 March, in order to curb the epidemic. The actual restrictions were affected more quickly by the authorities' recommendations. In Finland, workers were instructed at the beginning of March to stay home on a low threshold when the worker had returned from the coronavirus epidemic area or was feeling the symptoms of the flu. Like many other organizations, for example, Parliament recommended that the handshake be abandoned as early as 4.3. and the Defense Forces 5.3. At the same time 12.3. the government recommended banning public events for more than 500 people. Therefore, e.g. sporting events were generally discontinued. For example, the playoffs in the Finnish Hockey League were suspended on 12 March. and Floorball Federation series 13.3. The exercises of the junior sports clubs were generally stopped on March 12.

Recommendations and guidelines were gradually tightened. On March 16, 2020, the government outlined that there is an emergency situation in Finland due to the coronavirus. On the same day, the government recommended that all public sector employees switch to telecommuting as their job permits. The elderly population was urged to remain in quarantine-like conditions.

Tuesday 17.3. citizens were instructed to avoid unnecessary stays in public places. Public museums, theaters, libraries, swimming pools and other sports facilities were closed to

under the Infectious Disease Act. A recommendation for the suspension of activities was also issued to private cultural and sports operators. Under the Communicable Diseases Act, visits to municipal social and health care units were also restricted.

Wednesday 18.3. contact teaching in schools was discontinued with certain exceptions. At the same time, gatherings of more than 10 people were banned. 19.3. restricted cross-border movement by decision of the Council of State. Immediate return to Finland was recommended for Finnish tourists abroad.

At the end of March, 28 March, the government decided to restrict movement across the Uusimaa border (the restriction on movement ended on 15 April). Restaurants closed except for takeaway 4.4. from

With the exception of Sweden, even stricter restrictions on movement were introduced in other neighboring countries than in Finland. Denmark restricted entry from the epidemic area as early as 6.3. and closed schools on 13.3. by an exceptional law. External borders were closed on 14 March. Bars, cafes, restaurants, hairdressers, shopping malls and sports and fitness centers closed on 18 March.

In Norway, kindergartens and educational institutions were closed, sports and cultural events were banned and restaurants were closed as early as 12 March. Quarantine provisions for incoming passengers entered into force on 13 March. onwards. Entry was restricted from Monday 16 March. and all travel was advised to be avoided. Later, domestic travel was also restricted. The government also imposed a cottage ban on Norwegians on 19 March. from

In Sweden, the epidemic control policy is based on recommendations rather than restrictions. Authorities have recommended, among other things, teleworking wherever possible, avoiding domestic and foreign tourism, and minimizing social contacts for those over 70 years of age. Secondary and higher education institutions were recommended to switch to distance learning on 19 March. onwards. Primary schools and kindergartens have remained open. The restaurant, cafes, bars and nightclubs have remained open, but on 25.3. from then on, only table service is allowed.

There are few actual bans in Sweden. Gatherings of more than 500 people were banned on March 12. from and just over two weeks later the no-assembly limit was lowered to 50 people. Entry from outside the EEA and Switzerland was banned on 19 March. from 30 days. Visits to old people's homes were prohibited, with certain exceptions, 1.4. onwards.

2.3 Impact of restrictions on the spread of the epidemic

The obvious reason for the slowdown in the epidemic is the decrease in social contacts due to the fear of the disease caused by the virus, the recommendations of the authorities, and the restrictions on movement and assembly.

Due to recommendations and limitations, people-to-people contacts are a recent study³ according to a decrease in the UK to one quarter of a previous study⁴

normal situation in accordance with A similar study was conducted in Finland at the end of April. Its preliminary results are very similar to a study in the UK. Participants in the study met only a quarter of the people they met under normal conditions during the study day. Reducing contact directly reduces the infectivity of the virus and has greatly slowed the spread of the epidemic.

The current epidemic situation in Finland suggests that stricter restrictions are not needed. Instead, it is possible to relax some restrictions in a controlled manner. In this case, the obvious aim is to start with restrictions that will only increase the risk of a rapid spread of the epidemic but make normal life and economic activity more difficult.

This strategy requires an assessment of the relative importance of the various constraints. The effect of restrictions should also be able to be distinguished from behavioral changes that occur due to uncertainty and fear associated with the spread of the virus. For example, the number of spectators at mass events would probably be lower than before, even if they were not specifically banned. The same probably applies, at least to some extent, to restaurants.

It is not possible to break down the effects of individual restrictions on the basis of domestic data alone, as most of the restrictions entered into force at the same time. Instead, by making use of restrictions that have come into force at different times in different countries, it is in principle possible to compare the development of the epidemic in different countries with the introduction of different restrictions and thus assess the impact of individual restrictions. In principle, international data also make it possible to assess the impact of the lifting of individual restrictions.

³ Jarvis, Christopher I., et al. "Quantifying the impact of physical distance measures on the transmission of COVID-19 in the UK." medRxiv (2020).

⁴ Mossong, J., Hens, N., Jit, M., Beutels, P., Auranen, K., Mikolajczyk, R., ... & Heijne, J. (2008). Social contacts and mixing patterns relevant to the spread of infectious diseases. PLoS medical-, 5 (3).

In both cases, it must be assumed that the effect of the restrictions is similar in different countries. The assumption is, of course, unrealistic, as the content of the restrictions already varies from country to country.

Flaxman et al. a first empirical assessment based on international reference data on the impact of various constraints on **coronavirus deaths**⁵. **The report used data from 11 European countries on the dates of the restrictions and the progress of** the epidemic. Unfortunately, this study was not able to compare the effect of different constraints in a statistically reliable way. Restrictions were introduced in all countries within a short period of mid-March. Therefore, there is not enough variation in the international data used in the report on the timing of the introduction of different restrictions to differentiate their effects or to prioritize different restrictions.

Banholzer et al.⁶ **At the end of April, published a report based on slightly more extensive data from 20 countries (USA, Canada, Australia and 17 European countries, including Finland)** on the impact of various restrictions on the number of new infections. In this analysis, the most significant effects on the slowdown in the spread of the epidemic were the closure of public facilities and restaurants, ban on gatherings, closure of borders and closure of non-vital enterprises (the latest was not implemented in Finland). The ban on events for more than 50 people had a slightly smaller impact than these. On the other hand, school closures and curfews (not used in Finland) had only a small effect on the incidence of new infections.

There is also research focusing on the impact of school closures in Asian countries. Viner et al. (2020) have compiled a **systematic literature review of these**⁷. **According to the studies reported in this review, school closures were part of a** policy that effectively reduced coronavirus infections. However, its impact cannot be isolated from other restrictions introduced at the same time by Chinese or Hong Kong data. Previous studies on the spread of the SARS epidemic in China, Hong Kong and Singapore suggest that

⁵ Flaxman, S., Mishra, S., Gandy, A., Urwin, H., Coupland, H., Mellan, T., ... & Schmit, N. (2020). Imperial College Covid Report 13: Estimating the number of infections and the impact of non-pharmaceutical interventions on COVID-19 in 11 European countries.

⁶ Banholzer, N., van Weenen, E., Kratzwald, B., Seeliger, A., Tschernutter, D., Bottrighi, P., ... & Vach, W. (2020). Estimating the impact of non-pharmaceutical interventions is documented in- fections with COVID-19: A cross-country analysis. medRxiv.

⁷ See also Viner, Russell M., Simon J. Russell, Helen Croker, Jessica Packer, Joseph Ward, Claire Stansfield, Oliver Mytton, Chris Bonell, and Robert Booy. "School closure and management practices during coronavirus outbreaks including COVID-19: a rapid systematic review." *The Lancet Child & Adolescent Health* (2020).

that the role of schools in the spread of the epidemic is small. Indeed, the authors end up recommending slowing the spread of the epidemic by closing schools with more limited and low-cost interventions.

International data on restrictions imposed in different countries and the progress of the epidemic are already available in **more than 100 countries**⁸. **This data makes it possible to compare the severity of restrictions and the pace of the epidemic.** Unfortunately, even with this material, it is difficult to draw conclusions about the effect of restrictions on the so-called due to the problem of reverse causality. Restrictions will certainly affect the spread of the epidemic, but at the same time the spread of the epidemic will affect the introduction of restrictions. The correlation between the severity of the restrictions and the number of coronavirus infections is positive, which of course does not mean that the restrictions will accelerate the progression of the epidemic.

2.4 Epidemic and its containment

the impact of the restrictions imposed on economic development

The corona epidemic has severely reduced corporate turnover. Industry Investment for 1,600 small and medium-sized enterprises 3.4. – 5.5. According to a survey conducted by the company, 50 percent of companies say that turnover has decreased. Fifteen per cent of the respondents to this survey say that turnover decreased by more than 40 per cent during March compared to the corresponding period of the previous year. The companies that responded to the survey believe that net sales will continue to decline in April (Chart 2.3).

There are big differences between industries. The drop in turnover is largest in the accommodation and food service industries. On the other hand, a third of the grocery stores that responded to the survey say that their turnover has increased. In industry and construction, the decline in turnover has been relatively small during March. However, the situation of industrial companies can be expected to deteriorate in the coming months.

In addition to declining demand, problems are caused by supply chain disruptions. 65% of industrial, wholesale and retail companies report problems with the availability of raw materials or materials and logistics.

⁸ Hale, Thomas, Noam Angrist, Beatriz Kira, Anna Petherick, Toby Phillips, Samuel Webster. "Variation in Government Responses to COVID-19" Version 5.0. Blavatnik School of Governance Working Paper. April 29, 2020. Available in: www.bsg.ox.ac.uk/covidtracker

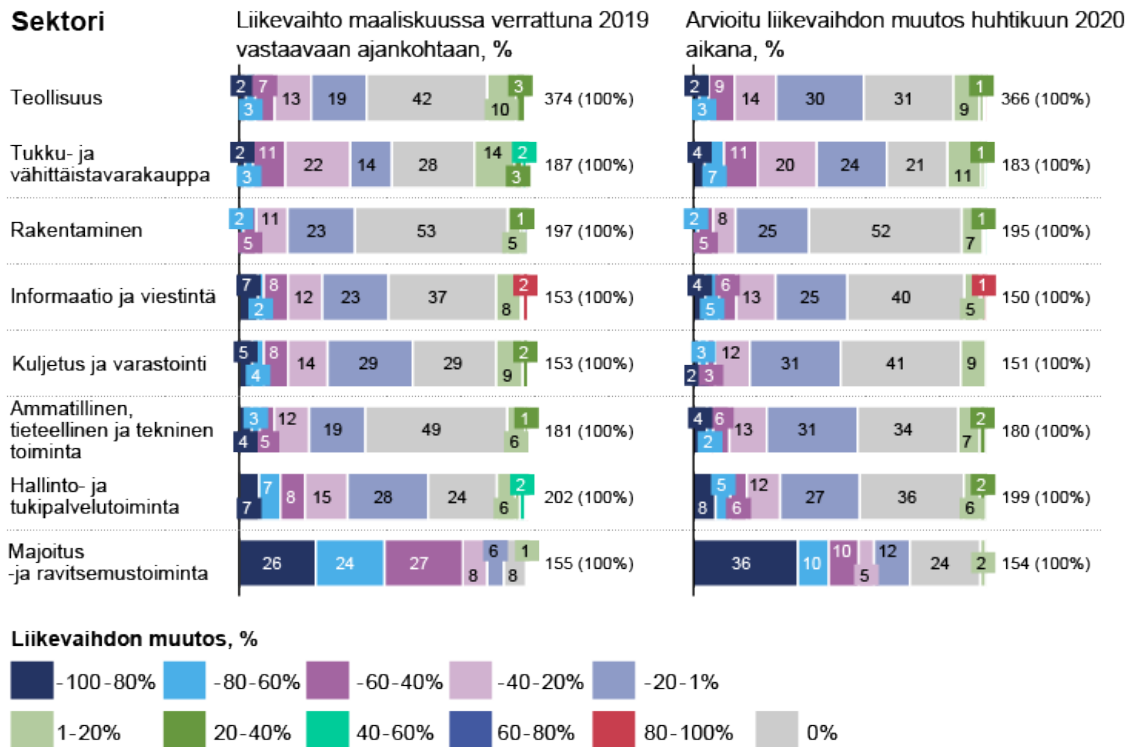


Figure 2.3. Change in net sales in March and April According to Industry Investment's business survey Surveys conducted from 3 April to 5 May N = 1600

According to a survey by Industry Investment, the problems are greatest in the smallest companies. Up-to-date information on small companies is also available from a sample of 10,000 SMEs selected from the system of the Accountor's e-financial management system.

Even in Accountor's data, the largest drop in invoicing is in the accommodation and catering sector, where 68 per cent of companies have invoiced a decrease of more than 50 per cent compared to the previous year. However, based on this material, the rapid decline in invoicing is a much broader phenomenon than the restaurant industry. The value of invoicing has fallen by more than 50 percent in about a third of companies in many other industries as well. However, in most industries, invoicing has increased for the majority of companies. The situations of the companies thus differ considerably.

With the help of Accountor's data, it is also possible to assess the liquidity of companies on the basis of changes in the number of overdue purchase invoices. Accountor

30.4. According to a report published by the Commission, the number of overdue invoices has multiplied compared to last year in companies that have lost more than 50

percent of its turnover. However, these invoices represent only a small part of the purchase invoices, indicating that most of the companies that have lost their sales are still able to meet their obligations.

Myyntilaskutuksen muutos 2019–2020 alkaen 15.3.

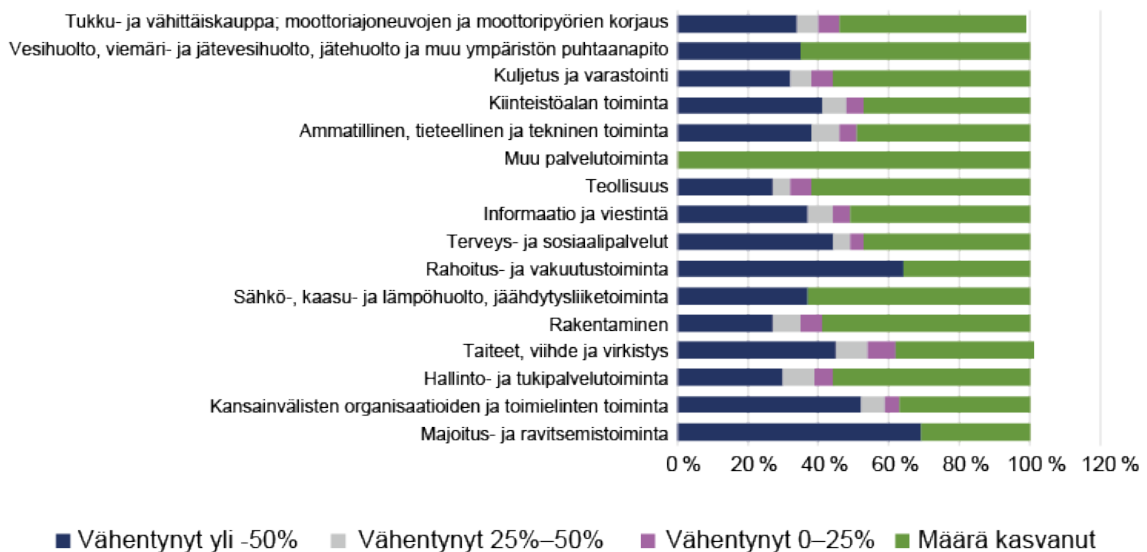


Figure 2.4. Annual change in sales invoicing 15.3. beginning period⁹

In addition to questionnaires and financial statements, the economic effects of the crisis can also be monitored through indirect indicators such as e.g. bank card payment data as well as mobile phone location information.

According to statistics compiled by Nordea on card payments, the volume of card payments in April is 25 percent lower than a year earlier. According to Nordea's statistics, the travel and restaurant sector is the hardest hit, with the volume of card payments falling by 70-90 per cent. Economic activity has also collapsed, e.g. taxis and cultural and leisure activities.

Card payment data is particularly useful for assessing the timing of a crisis. In principle, card payment data exists on a daily basis and, for example, Nordea reports

⁹ Source: Accountor

changes in the volume of payments on a weekly basis. The image below is taken from Nordea's Corona Meter ¹⁰ change in card payment in total and separately change in card payment in restaurants. The figure shows a rapid decline in activity in weeks 11 and 12, that is, from about March 10th. Thus, economic activity declined long before the restrictions came into force. For example, sales in restaurants collapsed almost a month earlier than the restaurants closed by a government decision on April 4, that is, at the end of week 14. At the same time, the picture shows that removing the restrictions is unlikely to restore customer numbers before confidence in the safety of eating in the restaurant is restored.

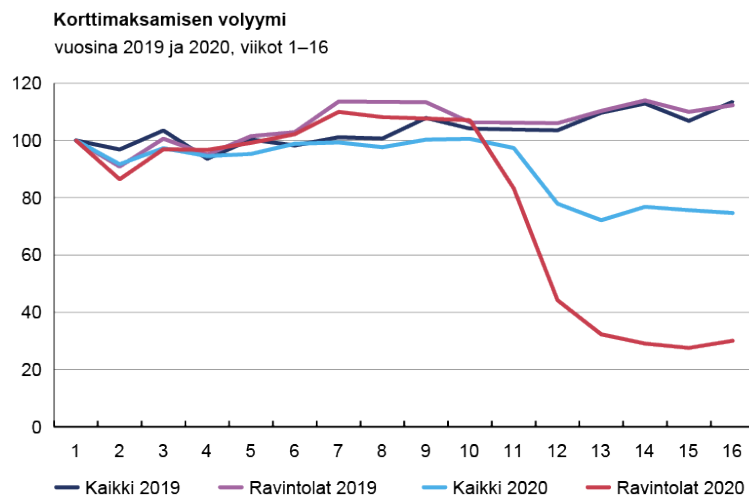


Figure 2.5. Card payment volume in 2019 and 2020 ¹¹

Mobile location data provides another interesting perspective on the effects of restrictions. For example, Apple publishes navigation data based on navigator data and Google cell phone location information.

Based on the data published by Google, the figure below shows the change in the number of visitors compared to January-February in various specialty stores and leisure venues in Finland and Sweden. Google's definition of leisure venues covers e.g. restaurants, cafes, shopping malls, libraries, museums and cinemas.

¹⁰ Corona meter: The impact of the corona crisis on consumption Tuuli Koivu, Kristian Nummelin and Robert Suomi 20.4.2020. <https://mb.cision.com/Public/434/3092>

¹¹ Source: Tuuli Koivu, Kristian Nummelin and Robert Finland: Corona meter: The impact of the corona crisis on consumption, Nordea 20.4.2020.

The analysis of mobile phone location data shows that the restrictions on traffic restrictions reduced the number of visitors in both Finland and Sweden at the beginning of March before the actual mobility restrictions came into force. However, developments in Finland and Sweden are clearly divergent in mid-March, suggesting that the assembly restrictions and the closure of public spaces introduced in Finland at that time had a significant impact on economic activity. Instead, for example, by closing restaurants in Finland 4.4. had little effect on visitor numbers.

Kävijämäärän muutos viihdepalveluissa ja erikoisliikkeissä

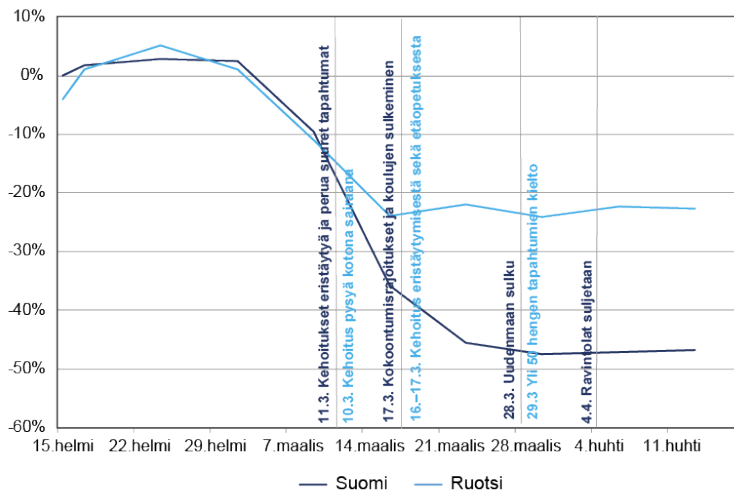


Figure 2.6 Change in the number of visitors based on Google mobile phone location data in different leisure destinations in Finland and Sweden ¹²

2.5 Impact of individual restrictions

economic development

Assessing the economic impact of different restrictions is at least as difficult as assessing the impact of restrictions on the development of the epidemic. There is little actual empirical data on the effect of restrictions. In addition to the lack of data, estimates are hampered by the fact that the restrictions were introduced at almost the same time. For this reason, it is very difficult to assess how the economy would have developed if there were no single constraint

¹² Source: Antti Sieppi, KKV and Google: Covid-19 Community Mobility Reports

<https://www.google.com/covid19/mobility/> (Note: the increase in the number of visitors in April is probably mainly due to Easter)

introduced. Empirical research on the effect of individual restrictions does not yet exist in Finland or in other countries.

So far, the effects of different constraints may be best disaggregated by surveys. For this report, the Finnish Competition and Consumer Authority has been available from 9 April to 13 April. collected consumer survey and to the member companies of the Confederation of Finnish Industries 14.4.–

15.4. coronavirus survey by. Both surveys asked about the harm caused to businesses and consumers by the different restrictions. The main results of the surveys are summarized in Figure 2.7.

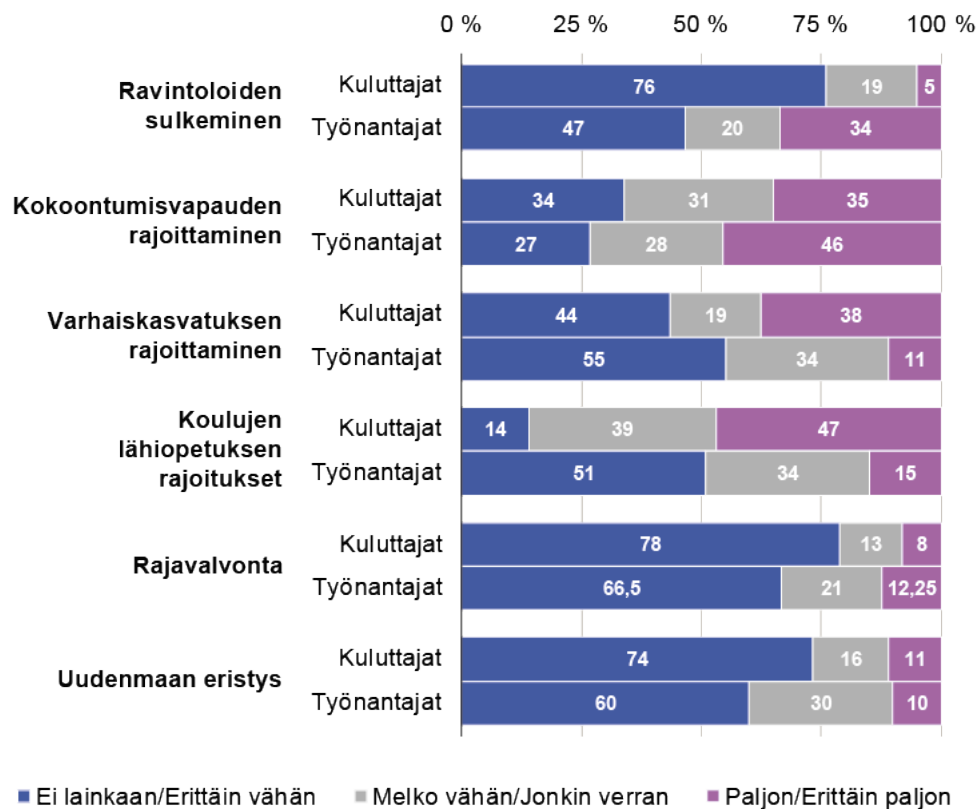


Figure 2.7 Harmfulness of restrictions by employers and consumers ¹³

¹³ Source: Finnish Competition and Consumer Authority 9.4. – 13.4. collected consumer survey and its member companies of the Confederation of Finnish Industries 14.4. – 15.4. coronavirus survey by. The EK questionnaire asked separately about the effects of entry, air and shipping restrictions. In order to compare companies' responses with consumers' responses, an unweighted average of the responses to these questions was taken, which is reported under 'border control'.

In the KKV and EK surveys, consumers and companies assess the effects of the restrictive measures imposed due to the corona epidemic on their activities in a similar way, but there are also significant differences.

The clearest consensus can be found on the impact of meeting and event restrictions on compliance. In the survey, a restriction on gatherings meant a ban on public gatherings of more than 10 people, and it was found that this had an effect on the closure of many public spaces. In addition, it was pointed out that the restriction also affects e.g. sports venues, sports competitions, theaters, movies and exhibitions. Just over a third of consumers and almost half of companies estimate that restrictions on gatherings and events make their operations very difficult, very much or crucial. From the point of view of companies, constraints on assembly are the constraints that most hinder operations. By far the most harm is experienced in the service sector, where 65% of companies in the service sector experienced a lot or a lot of harm.

Consumer responses highlight the impact of the recommendation on school closures and the use of crèches. The relative magnitude of the harm caused by these restrictions also depends on whether all respondents are asked to restrict the operation of schools and kindergartens or only families with children (as in the KKV survey).

Restricting kindergartens and distance learning in schools naturally make the daily lives of families with children particularly difficult. These restrictions have not significantly hampered the operations of companies.

The views of consumers and entrepreneurs differ perhaps most clearly in how perceived it is harmful to restrict the operation of restaurants. Only 5 per cent of consumers experience significant harm from restaurant closures, while a third of businesses report that restaurant closures are a major detriment or a crucial factor in their operations. In the EK survey, companies in the service sector report that the closure of restaurants makes their operations more difficult than others.

On average, there have been surprisingly few inconveniences from mobility restrictions (both abroad and Uusimaa). Only about 10 per cent of consumers have experienced restrictions on mobility making their daily lives more difficult - domestic restrictions have made it a little more difficult for consumers than international restrictions. In companies, on the other hand, international restrictions may have felt a little more, but even about 10% (10–20) of companies have found that international restrictions make it difficult for them to operate. International restrictions are more important in larger companies.

2.6 Impact of the epidemic and restrictions society at large

In addition to health care and the economy, the effects of the virus extend widely to society as a whole. Especially as the pandemic drags on, fear and anxiety and feelings of insecurity increase among the entire population. In addition, the pandemic and restrictions pose concrete and significant problems for other health care and, more broadly, social services.

Limited hospital capacity means that non-infected patients cannot be treated to the same extent as otherwise. People also avoid going to the doctor's and dentist's office themselves. Urgent cases will be postponed. At worst, the situation of these patients even worsens, making them urgent. In any case, a pent-up need for treatment is emerging that will cause long patient queues as the pressures of the virus ease.

The economic crisis itself is undermining the health of citizens. Studies in the UK have found that rising unemployment will increase the incidence of a number of chronic diseases in the coming years. In particular, there was an increase in musculoskeletal problems, cardiovascular disease, and respiratory and mental health problems.

Older people have been instructed to avoid social contact. This further increases the social isolation of many people living alone, which can only be alleviated by remote contacts. At the same time, home care services have declined, and many older people are concerned about nutrition and medication. As it prolongs, isolation can increasingly cause anxiety and mental health problems, as well as deterioration in physical fitness. In care services for the elderly, as in the production of social services in general, the number and resilience of staff is a key issue. There is a danger that burdensome work tasks and lack of resources will weaken the provision of services.

Numerous special groups are already suffering from increased mental symptoms or other problems. These include the homeless, people with mental health problems, people with disabilities and people with specific illnesses. The care and social services needed by these groups are difficult to maintain and cannot be completely replaced by remote services. 14

According to Statistics Norway, the closure of schools and kindergartens is very costly. Their size is estimated at up to 1.7

¹⁴ More specifically, e.g. In the background note produced by Juho Saari for the working group (Appendix 9): <http://urn.fi/URN:ISBN:978-952-287-898-4>

billion (approximately EUR 150 million) per day. The costs take into account the loss of labor input and / or productivity caused by the parents being at home. Of particular importance is the fact that children's learning suffers and that the depletion of their human capital reduces productivity throughout the life cycle.

Children and young people from resource-poor families are in a particularly vulnerable situation. The problems are compounded by the difficulty of families' livelihoods. Children at home do not benefit from the upbringing and care that is offered in kindergartens and schools. For many, distance learning is not a very effective form of study and the difficulties encountered in it can cause stress. Under these conditions, children's cognitive and social skills do not develop as favorably as under normal conditions. Learning outcomes deteriorate, with long-lasting effects. Similarly, in higher education, some are unable to complete or are delayed in graduating conditions, which undermines the success and income flow of individuals potentially over the entire life cycle. The social costs of closing kindergartens and schools and colleges are high.

Overall, the negative effects of the pandemic and the restrictions are particularly acute for already vulnerable groups, such as families with poor resources and the elderly living alone. Social inequality in families is increasing while the risk of exclusion of children and young people is increasing. The social problems that are now emerging are likely to be billed for a very long time to come in the years and decades to come.

3 The need to support businesses

The coronavirus epidemic has rapidly undermined the profitability of many companies. However, the impact of the epidemic is very different in different sectors and even between different companies in the same sector. To date, business support has been mainly in the form of loans and various development grants.

The Working Party has proposed that these be complemented by general profitability support specifically targeted at small and medium-sized service companies, based on the company's reduced turnover and the company's fixed costs. Again, this support can only be a temporary solution. As the crisis continues, the need for business support will shift to the most important companies in the national economy, possibly in the direction of capital-based support.

The coronavirus epidemic and the restrictions imposed to curb the epidemic have rapidly weakened the financial situation of companies in the service sector in particular. In many sectors, turnover has collapsed and some companies have ceased operations altogether. At the same time, layoffs and, to some extent, redundancies have grown rapidly. However, as noted in Chapter 2, the situation is very different in different industries and even within the same industry. A quarter of the industrial companies that responded to the Industrial Investment survey say that their turnover has decreased by more than 20 per cent. In the accommodation and food service sector, the share is 85 per cent. Still, even in the worst-hit accommodation and catering industry, there are companies with increased turnover.

Companies have reduced their costs by reducing purchases, laying off staff and negotiating discounts on other costs such as office rents. However, some of the costs are difficult to adjust. In the Industry Investment survey, 65% of SMEs stated that they could reduce their costs by up to 20%. The sharp decline in net sales and the cost structure that has only partially adapted to the change in net sales have turned cash flow negative. This poses problems for both liquidity and capital adequacy and profitability.

3.1 State aid to enterprises

The main goal of the business support policy so far has been to secure the liquidity of companies. The majority of the support provided so far is through various loan and financing arrangements

and deferrals of taxes and payments. Securing access to finance aims to prevent an acute cash crisis and to secure the opportunity to continue doing business beyond the crisis months.

The decisions of the Financial Supervision Authority on easing banks' solvency regulations, the Bank of Finland's interventions in the commercial paper market, the reorientation of the State Pension Fund's investments towards domestic commercial papers and increasing Finnvera's financing powers all aim to facilitate corporate access and prevent credit crunch. The loan or a loan-like subsidy also includes a temporary reduction in earnings-related pension contributions, the possibility of deferring earnings-related pension contributions and the re-lending of paid VAT to companies.

Direct support to companies has been granted in the form of discretionary grants from Business Finland, ELY centers and municipalities. These aid-based aid measures to strengthen the profitability of companies can be granted in total under the current mandate

For EUR 1.9 billion. The figure below shows how the financial responsibility is distributed between the different actors. The figure does not include the 6.5. support for the restaurant sector decided by the

Tilannekuva Rahoitusinstrumentit | TEM:n koronarahoitus yrityksille

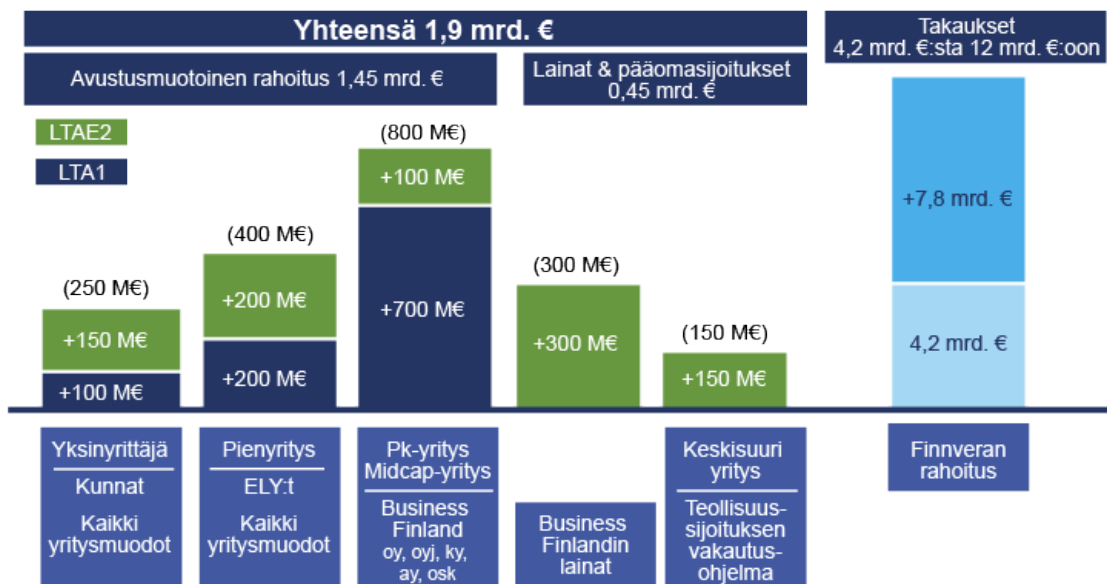


Figure 3.1 Financial instruments of the Ministry of Employment and the Economy during the interest rate crisis

3.2 International comparison

Internationally, based on the decisions made so far, Finland grants more direct support to companies than most Western European countries. Business aid, which is clearly higher than in Finland, is paid by Denmark, which introduced aid based on declining turnover in almost all sectors. Germany accounts for the largest share of GDP, but there the subsidies are mainly in the form of loans. In the USA, too, support packages are large. In the USA, households also receive support, e.g. through increases in unemployment security. Unemployment expenditure will naturally increase in Finland as well, as layoffs and unemployment increase. These automatic stabilizers are not included in the corona support package.

Comparing support packages between countries is difficult because support instruments are very different in different countries. In addition, it is difficult to assess the extent to which companies make use of the option to defer taxes and fees. Figure 2 is based on Pellervo's economic study 14.4. to update the report, which seeks to measure aid granted by different countries in the most comparable way possible. In the case of Finland, therefore, the decisions made in the framework dispute are also included.

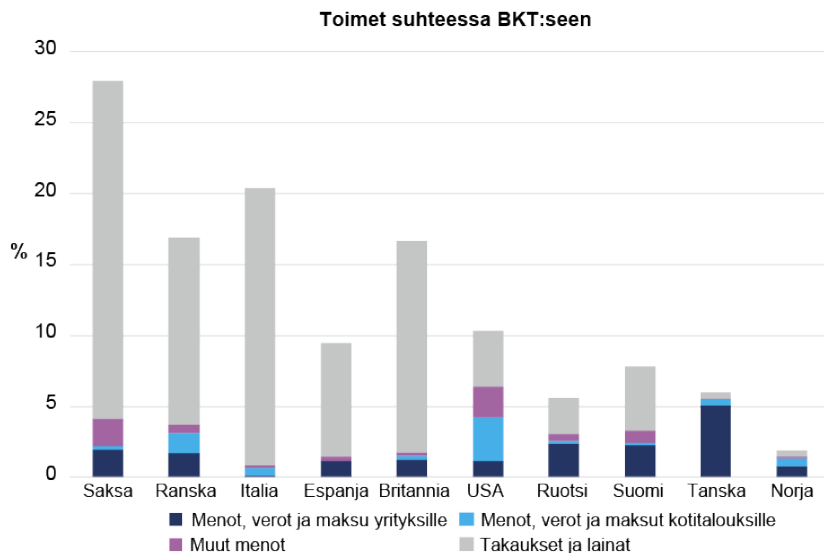


Figure 3.2 Business support during the interest rate crisis in some countries, relative to GDP. ¹⁵

¹⁵ Janne Huovari & Peetu Keskinen: "Can state support packages be compared? What does the Finnish package look like in composition and size?" PTT 14.4.2020

3.3 The need for direct payments

The business support introduced so far, mainly in the form of loans, alleviates the acute liquidity problem. In addition to liquidity problems, companies are also experiencing a profitability crisis that cannot be solved by loan arrangements alone. The decline in profitability also affects the willingness to borrow and the availability of credit.

Ensuring business continuity and avoiding bankruptcies also require direct support for the companies hardest hit by the pandemic. Direct support alleviates both liquidity and profitability problems. The purpose of the aid is to avoid the increase in unemployment resulting from the bankruptcies of viable companies and the loss of organizational capital as a result of the bankruptcy. Such support can also be seen as a risk-sharing mechanism for society in the event of an exceptional crisis caused by the corona crisis.

There are significant problems with current support models. First, due to the uncertainty of the future outlook, companies may not be interested in loan support. The threat of an acute liquidity problem due to the collapse in turnover has already been eliminated by many companies through cost-cutting and staff layoffs. Even during the crisis, the results of these companies are burdened by fixed costs that cannot be adjusted in the short term and which, if the crisis continues, threaten the company's ability to continue operating. Due to the uncertain future, the desire to finance losses accumulated during the crisis with loan money may be limited.

Of the direct subsidies granted so far, the most significant in euro terms have been Business Finland's development financial subsidies. However, development grants are ill-suited to assisting companies in crisis and have not been designed for such. The purpose of development grants is to support innovation and the construction of new activities. In times of crisis, there would be a greater need for aid to help maintain existing structures so that, once the crisis is eased, action can be relaunched.

3.4 Working group proposal

The working group submitted on 12.4. a proposal for a new business support model for its clients, aimed at

- target aid to companies whose turnover has been hit hardest by the corona epidemic
- target support at fixed costs that are difficult for companies to adjust
- be based on easily and reliably measurable financial statements in a way that makes the granting of aid administratively simple;
- distort business behavior as little as possible

- be fair, generally acceptable and costly within the limits of the sustainability of society

According to the working group's proposal, the aid would be paid to companies whose turnover has decreased by at least 30% compared to the corresponding month of the previous year due to the corona epidemic. After this lower limit, the aid would increase linearly in relation to the decrease in turnover. The higher the company's turnover due to the corona epidemic, the higher the aid. In addition, the amount of aid would depend on the amount of the company's fixed costs and the company's current staff costs. The aim is, on the one hand, to target support at costs that are difficult to adjust and, on the other hand, to support companies that pay wages during the crisis, despite declining sales.

The working group proposed that the aid be paid in full for March and April and reduced in May and June. The idea was to balance the risks during the acute crisis, not to create a permanent support system. According to the proposal, support would be targeted at companies with less than 250 employees. There would be maximum and minimum amounts of support, which were left for further consideration in further preparation. In the further preparation, possible industry boundaries, the possible targeting of the aid to a more limited company size class and the parameters that determine how strongly the change in turnover would affect the aid were also considered.

The support for the basic basin corresponds to the support models introduced in Norway and Denmark. In contrast, the aid would be based in part on staff costs and thus contribute to supporting employment and the ability of companies to return to normal business once the crisis has eased.

A detailed proposal for the support model with preliminary cost and effectiveness calculations is attached to this report.

In addition to the working group's own calculations, test calculations have been made on the effects of the support model at the Ministry of Finance, the Bank of Finland and Helsinki GSE. The calculations are based on financial statement databases and survey data on changes in net sales and EBITDA, as well as cost adjustments.

The basic idea of the calculations is to assess how the different support models would affect the profitability of the example companies and thus the adequacy of liquid funds in the companies worst treated by the crisis. There are, of course, a number of uncertainties in the calculations. For example, the financial statement databases in use only extend until 2018, because the financial statement data for 2019 need be submitted to the taxpayer only at the end of May 2020.

According to the results, the aid would significantly reduce the share of companies whose EBITDA weakens in April. On the other hand, the impact of the aid on the number of companies facing insolvency problems is relatively small. This is mainly due to the fact that the situation of the companies that responded to the survey is still relatively good on average. With the exception of the accommodation and catering sector, EBITDA had weakened "only" in about half of the companies that responded to Industry Investment's survey. Even of these companies, less than a third were still unprofitable in terms of EBITDA. Thus, even in times of crisis, the majority of companies are making a positive profit, and these companies are not threatened with running out of liquid assets very soon. On the other hand, about 10 percent of companies estimate that they are at risk of insolvency in less than four weeks.

Variations of the model

The business support model we propose has parameters that can be used to adjust both the cost level and the sensitivity to falling sales. In the model calculations, we have assumed that the aid will be targeted at the whole SME sector according to the same formula. Due to the large number of companies among them, the subsidies remain relatively small. One possible solution is to target support to a narrower group. By targeting support to companies with 10 to 100 employees, for example, the number of companies receiving support will be significantly reduced and the support may be correspondingly higher. It is also conceivable that the structure of the support model is applied by industry using different parameters in different industries.

Its own question is whether rent and comparable costs should be treated separately in a way that would also share the risk with landlords. In Sweden, for example, support is paid to landlords who lower corporate rents. However, such arrangements would make the aid model much more complex.

Longer support

As the crisis continues, companies will be forced to adapt to the changed situation and the insurance element of the aid will become less important. The business support model is therefore not suitable for long-term business support. As the crisis persists, it is also necessary to assess which companies' bankruptcies cause the greatest losses to the rest of society through lost production or employment, and to target societal support for these critical companies. The situation of companies can also be difficult when operations are restarted. Accelerating this step may require new support models.

The support model proposed by the working group is also not suitable for supporting large companies. In companies with more than 100 employees, company-specific support should be substantial to be effective. In this case, for reasons of cost-effectiveness, it is important to assess the need for support on a company-by-company basis. Due to the limited number of such companies, there is also a better chance of such a company-specific assessment in practice.

Medium-sized companies (100-250 people) are a particularly important group. There are traditionally too few of these companies in Finland. At the same time, they have a number of companies with the potential to grow into major international companies. Some of these companies make money from the market. Industry Investment is also preparing a program to recapitalize companies of this size.

The situation of most medium-sized industrial companies is not yet critical. However, as the crisis continues - which, unfortunately, seems increasingly likely - it would be good to be prepared to support these companies.

The task force does not have a model to support medium-sized industrial companies. Also, only one model may not be suitable to support this set of companies. The need for support should be addressed on a sectoral basis. The need for support can also be very different for growth companies seeking to enter the international market than for established domestic companies. This requires more in-depth reflection. The key problem is uncertainty about the duration of the crisis. However, the duration of the crisis is of great importance to which companies are in difficulty.

In order to be able to identify the support needs of such companies, we propose the creation of a new group of experts focusing on this issue. The task of the group would be to consider how and using what instruments and bodies to ensure the preservation of valuable human and organizational capital through the crisis.

4 Restrictions and their lifting strategy

The epidemic in Finland has been brought under strict control. At the same time, restrictions combined with fear of falling ill have led to a significant reduction in economic activity and various social problems. For these reasons, it is justified to seek to relax the restrictions as soon as it is safe for the epidemic.

The government's strategy is to phase out restrictions and replace them with other means that are less disruptive to the lives and economies of citizens. Implementing the strategy in a way that does not lead to an acceleration of the epidemic requires effective compensatory measures to control the epidemic. In practice, this means an extensive program of testing, tracing, isolation and care, as well as the use of protective equipment and the adoption of safe practices in the workplace and in other day-to-day interactions. Companies and their representative organizations have begun to actively develop such practices. The state should support this in every way. A clearly and realistically communicated plan is a key prerequisite for a functioning dismantling strategy.

Strict measures to limit the spread of the epidemic have been effective and the epidemic appears to be under control. There is no acute need to tighten restrictions. On the other hand, the current restrictions are overwhelming for citizens and the national economy in the long run. Restrictions make it more difficult for companies to operate in a way that leads to bankruptcies, mass unemployment, high government indebtedness, growing social inequality and, over time, a shrinking operating environment for healthcare. Therefore, a path must be found to relax the restrictions.

The epidemic can be finally stopped either with the help of a vaccine, by achieving herd immunity or by developing treatment methods that can effectively treat the disease. It will probably take at least another year to develop both the vaccine and effective treatments. Thus, a strategy is needed that will allow everyday life and economic activity to continue as normal as possible, but still safely, until a final solution is found to stop the corona epidemic.

Finland has chosen the so-called A “hybrid strategy” that is quite similar to that of many other European countries. In this chapter, we first discuss the hybrid strategy and its options. We then consider in what order and to what extent it would be appropriate to remove the restrictions, given both the benefits of the various restrictions in curbing the epidemic and the disadvantages they cause for economic development and the daily lives of citizens.

There is a great deal of uncertainty about both the progress of the epidemic and the possibilities of influencing its progress with different instruments. This should also be taken into account in strategy choices.

4.1 Baldwin's two-constraint frame ¹⁶

Restrictions can affect the course of the epidemic. To put it simply, it is conceivable that the course of an epidemic is guided along a path where the number of new infections depends on time and prevailing constraints. This is illustrated in Figure 1, where the horizontal axis measures time and the vertical axis measures tension.

All valid paths must meet two conditions:

The first condition is *the epidemic is limited*: progress must be made so that the number of patients remains within the limits of health care capacity. Experiences from around the world (Italy, Spain and Britain, for example) show that overcrowding in hospitals has devastating consequences. The red bar in Figure 1 indicates the minimum stringency of the constraints at each time point so that hospital capacity is not exceeded.

Another condition is *social sustainability tolerance is limited*: the path chosen must not lead to excessive economic costs, social problems or a loss of public confidence. The economic collapse will weaken the ability to sustain the livelihoods of citizens and the viability of businesses, as well as the operating conditions of health care. Public frustration can also lead to restrictions and authority recommendations no longer being followed. The green segment tells you what the maximum tightness of the restrictions is at any given time so that the resilience of society is not exceeded.

¹⁶ This formulation of the two constraints is based on the problem statement presented by Baldwin (2020). <https://voxeu.org/article/covid-remobilisation-and-stringency>

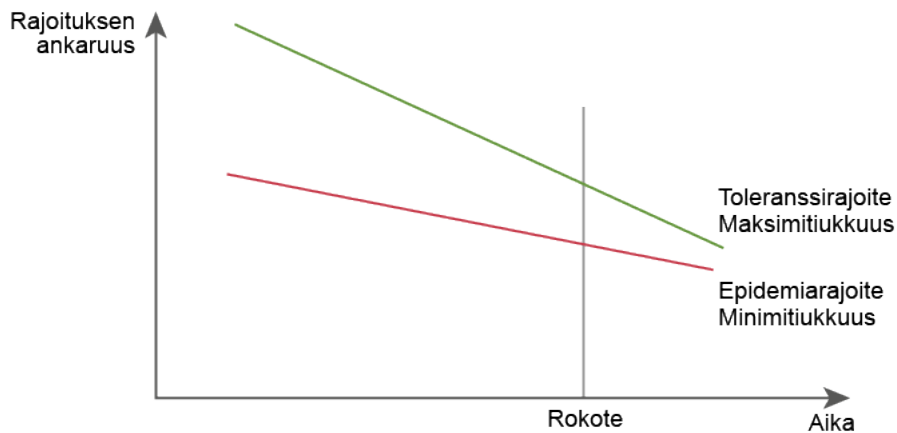


Figure 4.1. Tolerance and epidemic constraints

Both lines in Figure 1 decrease over time. The epidemic constraint is easing because as the population's immunity increases, infectivity decreases and restrictions can be loosened without compromising health care capacity. Improvements in treatment methods, such as increased hospital and testing capacity, will also ease the epidemic constraint. On the other hand, the escalation of economic problems tightens the tolerance constraint. The house cannot be kept viable for very long with the support of society. Citizens' patience will also be tested over time.

The fair path moves between the epidemic constraint and the tolerance constraint.

4.2 Which strategy is optimal?

Determining the optimal path would require better information on many uncertainties than at present. The greatest uncertainty relates to when effective drugs needed to treat the disease could be available and when a vaccine against the virus could be developed. Still, it is possible to assess which factors influence path choice with a simple thought model.

If a vaccine or effective treatment is never found, all possible pathways will eventually end up in a situation where a sufficiently large proportion of the population becomes infected and herd immunity begins to slow the progression of the epidemic. The fastest path to herd immunity is to allow the virus to spread without restrictions until the limits of medical capacity are met. It then moves on to the limitations that keep the virus's treatment capacity at the limit. In the illustrative figure 1, it is thus conveyed along the red border

ponderous giants. In this case, too, it is possible to gradually relax the restrictions as immunity increases without exceeding the capacity of health care. In the end, restrictions are no longer needed because the number of people susceptible to infection has dropped to a sufficiently small level.

The path following a health care capacity constraint is best if more stringent constraints are very costly for society. Almost as many get sick and die on every other path because the end point of the path is herd immunity. The only difference compared to other possible paths is the economic and social costs, which are the lowest possible on this path based on minimum constraints.

The Swedish path has been similar to the optimal path above. Most other countries, including Finland, are instead working hard to slow down the epidemic. The main reason is related to the possibility of finding a vaccine or a sufficiently effective treatment. If such is found within a reasonable time, the high human cost of the Swedish path as well as the high number of deaths will be avoided. Stricter restrictions in this case lead to a substantially better result.

Instead, if the vaccine is not made available quickly enough and the epidemic eventually spreads to the entire population, the slower path is worse. The number of ill and dead is the same on both paths, but the economic and social costs of the slower path are much higher. It is not, therefore, a question of stricter restrictions leading to a more devastating "second wave" of the epidemic. Instead, tighter restrictions will prolong the crisis without substantially affecting the number of people affected. The loss caused by the restrictions is related to financial losses, not to the greater health damage caused by the epidemic.

Expanding options: testing, monitoring, isolation and protection

An important addition to the above calculation is the possibility of replacing strict restrictions with equally effective but less economically harmful measures. Effective identification, tracing, isolation and, where necessary, treatment of those infected will help to ease restrictions, which will support economic and social sustainability and tolerance.

Sufficient antibody testing to identify immunocompromised individuals and PCR tests to identify infected individuals should be widely available.

The antibody test provides information on the extent to which the population has acquired immunity to the virus. In this way, people can be identified who can safely be economically and socially active. A PCR test is used to identify people with a viral disease who can spread it. Together, these tests make it possible to map the infection situation as well as to take quick control measures when an outbreak appears. Randomized tests provide information on the prevalence of the disease and at the same time provide data for research on its transmission mechanisms.

Like most other countries, Finland does not yet have sufficient test capacity, although it is expanding rapidly; currently, the capacity of PCR tests is about 6,000 tests per day. In May-June, the capacity will apparently increase to 11,000-16,000 tests.

The importance of testing in easing restrictions is essential: the higher the test capacity, the looser the other restrictions may be. In the United States, plans have been put forward for massive PCR testing to quell the epidemic ¹⁷.

Admittedly, this would require huge amounts of testing.

Piguillem and Shi (2020) show that random testing can slow down the epidemic almost as effectively as population-based isolation policies. ¹⁸ For this reason, it is worth investing in testing on the research side as well. The price, convenience and speed of tests are constantly evolving. PCR rapid tests are already available. In the event that no vaccine or effective treatment methods are invented in the near future, an effective testing policy could develop as a third way out alongside vaccine and herd immunity.

Acemoglu et al (2020) have shown how effective testing is when combined with isolation of the elderly. ¹⁹ According to their model, this can significantly reduce the deaths caused by the epidemic. and lower testing costs.

To enable sufficient testing and traceability, it makes sense to make extensive use of private sector capabilities as well. In this respect, Finland's well-functioning occupational health system offers good conditions for expanding operations. In addition to testing, tracing those who have been in contact with those infected is

¹⁷ Paul Romer's proposal can be found at <https://roadmap.paulromer.net/paulromer-roadmap-report.pdf> , and a more detailed proposal from the Rockefeller Foundation at <https://www.rockefellerfoundation.org/national-covid-19-testing-action-plan/> . Critical assessments of mass testing have also been presented; see for example <https://voxeu.org/article/stratified-periodic-testing-covid-19>

¹⁸ Piguillem and Shi (2020) "Optimal Covid-19 Quarantine and Testing Policies," DP 14613, CEPR.

¹⁹ Acemoglu, Chernozhukov, Werning, Whinston (2020) "Optimal Targeted Lockdown," MIT.

essential. Therefore, these activities need to be organized efficiently and adequately staffed.

Another way that has only been used to a limited extent to slow down the epidemic is effective protection. There is a worldwide shortage of face shields. Finland is already able to manufacture face shields for the needs of healthcare workers. The state should actively promote the emergence of domestic production, for example by creating a rapid certification scheme applicable in Finland. It remains to be assessed whether the use of face shields should be recommended for the general population. In many European countries, their use is recommended and in some countries even required.

Clear operating instructions and boundary conditions must be defined for lifting restrictions

Knowledge of the impact of easing individual restrictions is very limited. Most estimates are based on simulation models. There are few genuine empirical estimates of the impact of individual constraints. For this reason, too, restrictions must be lifted carefully.

There are three general conditions for lifting restrictions. First, the epidemic must be under control. Second, testing and surveillance capacity must be at a level that allows the disease to be monitored and a new rapid spread to be prevented in a situation where restrictions do not completely prevent it. Third, there must be sufficient hospital capacity in areas where restrictions are eased so that all sufferers can be cared for.

In addition to these conditions, it is important that citizens can feel sufficiently secure within the relaxed restrictions. Removing restrictions too quickly would certainly reverse the accelerating growth of the epidemic, which would increase morbidity and public fear and anxiety. This would easily nullify the economic and other benefits that deregulation seeks to achieve: the use of services would not increase for fear.

Currently, the epidemic is under control and the number of patients requiring medical attention is declining. Technically, this means that the effective infectivity rate of an epidemic is less than one. When relaxing restrictions, the aim must be to maintain infectivity at this level due to compensatory restrictions and behavioral change. It should be noted that this means substantially stricter measures to control the epidemic than

THL's scenarios presented in the Exit Working Group report are assumed. In these, infectivity increases to a level where the epidemic begins to spread again at an exponential rate.²⁰

To remove restrictions step by step

Restrictions affect both economic development and everyday life in many ways. Efforts must be made to alleviate them as soon as the epidemic situation allows. This approach can also be expected to have the support of citizens. For example, in a survey by the Finnish Competition and Consumer Authority, citizens were more concerned about the bankruptcies of small businesses than about the risk of falling ill.

The easing of restrictions is already being started in countries where the epidemic is not as well controlled as in Finland. In Finland, the conditions for easing restrictions are good. The coefficient of infectivity (R_0) has been estimated to have fallen below one, and the progression of the epidemic is therefore slowing down all the time. In healthcare, capacity is sufficient and testing capacity is expected to triple by June.

It is of paramount importance that there is a clear plan for deregulation and the goal of the "new normal" that deregulation aims to achieve. In this new normal, the restrictions imposed by the authorities have been largely removed, but social norms continue to lead to special caution.

The goals and the plan to achieve them should be carefully articulated and communicated to the people. The goal and plans should also be constantly updated. In this respect, too, a good foundation has already been laid through the government's almost daily press conferences.

The prevailing uncertainty about the impact of the various measures and the priority given to safety call for caution. Re-introducing restrictions that have already been removed would undermine public confidence in the strategy adopted. Restrictions must be phased out so that the risks of an increase in infections are kept to a minimum while minimizing economic damage.

²⁰ To avoid confusion, it should be recalled that the pace of the epidemic depends not only on the communicability but also on the proportion of the population susceptible to infection. The epidemic progresses at an accelerating pace if the effective infectivity, i.e., the product of the infectivity rate (R_0) and the susceptible population (S), is greater than one. When the disease is immune to the disease, the effective infectivity rate is close to the R_0 infectivity rate.

The transition from one stage to the next requires knowledge that the disease remains under control. Otherwise, you must temporarily return to the previous step. Progress in different regions may be different due to different conditions in the regions. The plan recently presented by the United States follows the above formula, even if its implementation depends on speculation. Germany, Norway and Denmark, among others, are also scheduled to move forward in phasing out restrictions.

The invention of vaccination would allow a final return to normalcy.

The aim is to be the first to dismantle restrictions that increase the risk of an epidemic only slightly, but which are most detrimental to economic development. Unfortunately, information on both the impact of restrictions on the spread of the epidemic and the harmfulness of restrictions on economic development is incomplete. However, research on the subject is being carried out all the time, and the information required by the decisions will therefore be improved in the near future.

One way to illustrate the results of the study is a matrix in which one axis has the economic disadvantage of constraints and the other axis the role of constraints in slowing the epidemic. The idea is borrowed from a study by Benzell et al. (2020)²¹, which, using the same principle, analyzes the significance of different functions of society for the epidemic and the economy. All such illustrations are, of course, rough. There is not enough robust data to use estimates to create an optimal deregulation strategy.

In the matrix of Figure 4.2, the harm of restrictions is assessed with the help of surveys conducted by the Finnish Competition and Consumer Authority and the Confederation of Finnish Industries.²² The vertical axis is the average of the share of consumers and employers according to which the restriction is much detrimental to normal operation. As stated in Chapter 2, respondents are most affected by restrictions on freedom of assembly and the consequent closures of public spaces and bans on mass events. According to the respondents, the least detrimental was the tightening of border controls. In the employer survey, this answer is an average of the questions about the disadvantages of shipping and air travel, entry and restrictions on the mobility of foreign labor.

The horizontal axis describes the effect of individual restrictions in slowing down the epidemic. This cannot be measured by domestic data alone. Horizontal axis figures

²¹ Benzell, Seth G., Avinash Collis, and Christos Nicolaidis. Rationing Social Contact During the COVID-19 Pandemic: Transmission Risk and Social Benefits of US Locations. Well. d64vm. Center for Open Science, 2020

²² The results of the surveys are described in more detail in Chapter 2.

has been taken from a study based on data from Banholzer et al. (2020) in 20 countries²³. International data can only be used to assess the impact of restrictions that have been introduced in several countries (eg restrictions on movement across the Uusimaa border) and that are sufficiently similar in different countries. Some of the restrictions have not been introduced in Finland. With these limitations, only five limitations remain in Figure 4.1.

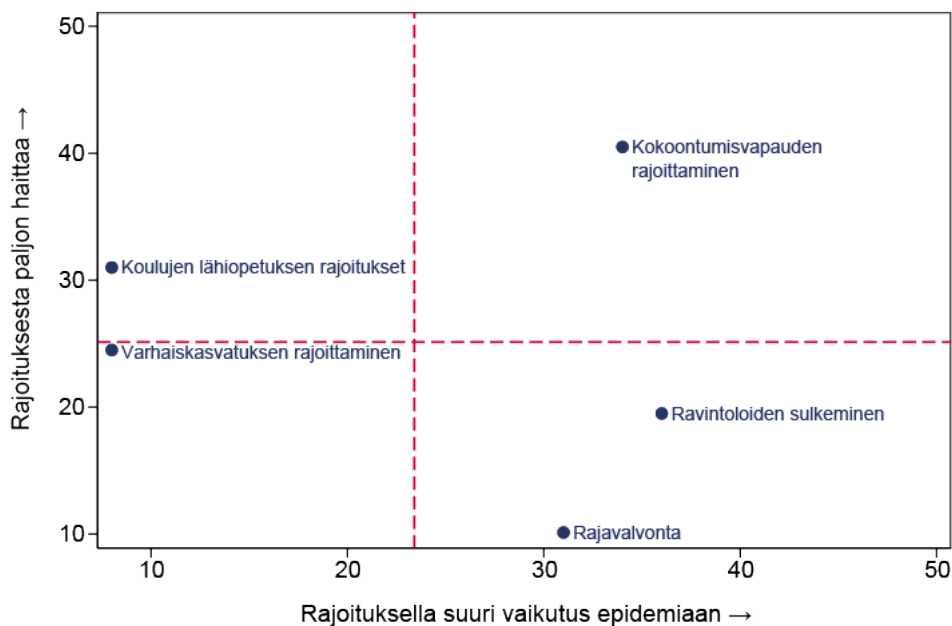


Figure 4.2 Impact of restrictions on slowing the epidemic and harmfulness of restrictions

In the figure, the effect on the epidemic means the effect of the restriction on the infectivity rate,%. According to a study by Banholzer et al. (2020). The study did not specify the impact of early childhood education and school closures, so the same estimates of the impact on the epidemic were used for both. The disadvantage of restrictions is measured in the survey of KKV and EK by the proportion of respondents who experienced much or very much harm. In the KKV study, questions about schools and early childhood education were singled out only for parents of school-age children. Dashed lines are unweighted averages of the entire data.

If you estimate the impact of the restrictions on the epidemic and the harmfulness of the restrictions are at least somewhat reliable, the dismantling of the restrictions should start in the upper left corner of the figure. In this sense, the government's decision to open primary schools

14.5. is well justified.

²³ Banholzer, Nicolas, et al. "Estimating the impact of non-pharmaceutical interventions on documented infections with COVID-19: A cross-country analysis." medRxiv (2020).

4.3 Conclusions

Maintaining existing restrictions will have major and, over time, increasingly serious social consequences. Therefore, the line chosen in Finland for the gradual easing of restrictions is well justified.

On the other hand, the available estimates of the impact of various restrictions on the spread of the epidemic and on the economy and society are very uncertain. Uncertainty favors a cautious and step-by-step strategy that constantly exploits new information from both domestic and non-domestic sources. The small-step strategy provides new information without creating too great a risk of a rapid acceleration of the spread of the epidemic.

The lifting of restrictions can take place at different rates in different regions, as the epidemic situation is different in different regions. Priority must be given to removing barriers that support a rapid recovery in employment and the ability of companies to thrive in perhaps weak market conditions.

For the time being, telework should be continued where it works well. However, teleworking is not suitable for all activities and in many areas teleworking is significantly less productive than work in a normal work community. Isolation is mentally stressful and makes teamwork difficult. Personal meetings with other members of the work community as well as clients are an essential part of normal working life. In this regard, one must strive to return to the old normal by adopting good security practices, "protocols," that allow for a safe return to work. These have already been adopted by many work communities and the dissemination of good practices is an important and cost-effective way of protection. The state should contribute to this rapid spread of new practices. When this is evidenced, the recommendation to stick to telework should be revised so that

It is difficult to assess the extent to which restrictions affect the progression of the epidemic on the one hand and economic development on the other, and the extent to which these are behavioral changes independent of restrictions. It is equally difficult to specify the effects of individual restrictions.

According to the available information, the government's decision to open primary schools and kindergartens is justified. **For a hitherto unknown reason, children appear to be significantly less infected with the coronavirus than adults**²⁴. Children are also infected with the disease

²⁴ Russell M Viner, et al "School closure and management practices during coronavirus outbreaks including COVID-19: a rapid systematic review. *Lancet* Vol 14, May 2020. There are also studies where no such evidence has been found; Zhang et al. "Changes in contact patterns

Rarely. On the other hand, kindergartens and schools are of great financial importance. Perhaps an even more important aspect is that early childhood education has far-reaching implications for children's later development. Older age groups and universities have better opportunities to study remotely.

Allowing large mass events in the early stages is not appropriate, although there are significant financial disadvantages associated with gathering restrictions. The risk of increased infections in assemblages is high.²⁵

Special care must continue to be taken with regard to social contacts between older people. At the same time, care must be taken, especially for the services and coping of the elderly. The protection of the elderly should not lead to situations where it becomes impossible for them to meet their loved ones when this does not endanger outsiders.

The government's decision to allow restaurants to open also fits into the matrix. The economic impact of the restriction is quite large. Mitigation could perhaps begin in low-prevalence areas of infection. In addition, there are requirements for action to control the spread of infections.

The government's policy of phasing out restrictions is good. However, it is somewhat unclear on what criteria the effects of deregulation are to be assessed. The scenarios presented in the background material of the government's policy suggest that the epidemic could or even should be allowed to enter a path of accelerating spread for some time ($R_0 \gg 1$). This carries with it the aforementioned risk of fear reactions and forcing them to severely re-tighten restrictions, which could have significant implications for behavior.

If the government wants to avoid this risk, the infectivity factor R_0 should be able to keep the restrictions close to one even when unloading. Progress in deregulation then requires a proven ability to limit the spread of the epidemic by other, lighter means. It would be good if the government communicated the implementation of the strategy as clearly as possible in this regard as well.

The corona crisis, like all crises, requires up-to-date, rapidly updated information. Like war, you need to get constant information about where the enemy, in this case the virus, is moving and what it will accomplish. To this end, new data collection systems need to be built, including using non-traditional data sources. Weekly surveys

shape the Dynamics of the COVID-19 Outbreak in China ", Science, 10.1126 / science.abb8001, 2020.
²⁵ Banholzer et al, 2020, edel.

and real-time data collected from mobile devices is much more valuable in this situation than in slowly changing normal conditions. Finding, using, and refining new sources of information is, to the greatest extent possible, an innovative activity.

5 Macroeconomic development outlook

Corona shock marks a serious recession all over the world and also in Finland.

Uncertainty about the depth and duration of the recession is high. It seems increasingly likely that some degree of restrictive measures will have to be maintained around the world and also in Finland for a relatively long time. Uncertainty about the epidemic and economic development will not dissipate quickly. Even massive policy measures will not be able to completely prevent the multiplier effects of the shock. It is reasonable to assume that production and employment will decline for several years from their previous growth trajectory. Together with the debt accumulated during the crisis, this will weaken the balance of public finances also in the medium term and increase the sustainability gap of public finances. On the other hand, it is too early to say anything certain about the long-term effects on employment and growth.

5.1 A sudden halt in the international economy ²⁶

The global economy has experienced an exceptional shock as a result of the corona pandemic. At its best, the world economy is plunging into a deep recession this year. IMF 6.4. according to a published baseline forecast, global output will contract by 3% in 2020. The projected decline is much larger in developed countries, at around 6%, and as high as 7.5% in the euro area. The direct impact on GDP is thus greater than the contraction in output caused by the global financial crisis. On 1 May, the ECB presented three scenarios for economic developments in the euro area. The middle of them corresponds to the basic forecast of the IMF, where GDP will shrink by 8% a year

2020.

²⁶ This section is based on a memorandum from Iikka Korhonen and Kimmo Virolainen (<https://www.eurojata-alous.fi/fi/2020/1/maailmantalouden-akkipysahdys/>).

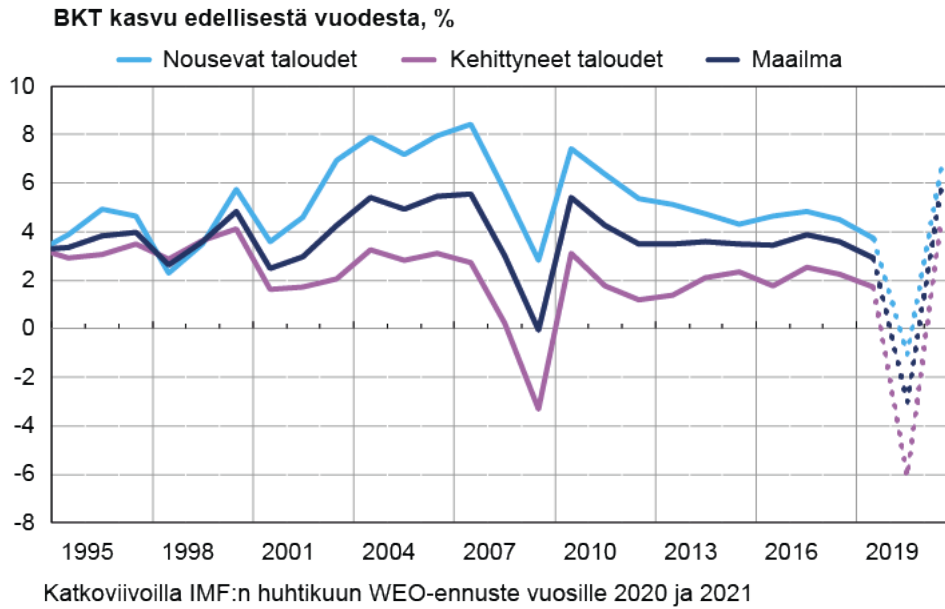


Figure 5.1. Global economic growth according to the IMF: baseline forecast for April 2020

The IMF baseline forecast assumes that economic damage will remain low and that the pandemic will subside in the second half of 2020. At the same time, this means that in a large number of countries around the world, various measures restricting economic activity can be largely abandoned from the third quarter of the year.

However, both the development of the pandemic and the economic impact of the austerity measures are very uncertain. The IMF has therefore developed two alternative scenarios. In the first of these, the pandemic and restrictions will last 50 percent longer than the baseline option and in the second that the pandemic will recur in 2021 at about 2/3. The growth holes then become even worse. The combination of the two options is particularly weak. A mere prolongation of the crisis would mean, for example, a double loss of GDP in the global economy in 2020.

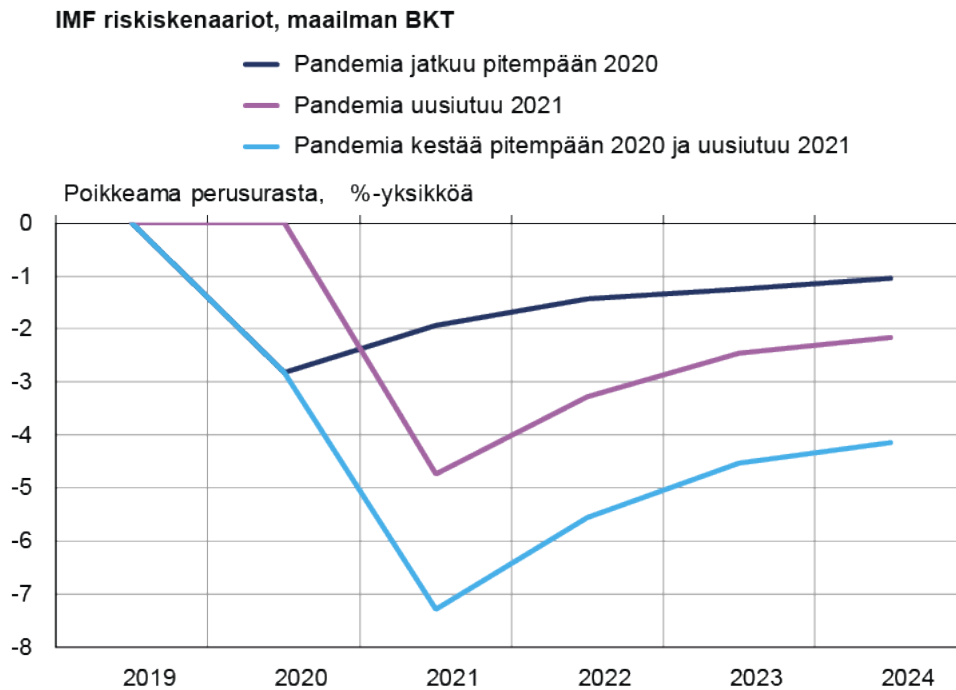


Figure 5.2. IMF risk scenarios: deviation from baseline

The calculations assume that declining asset values, uncertainty and risk mapping will tighten financial conditions. However, the scenarios do not include the assumption of large-scale banking crises or the insolvency of states. On the other hand, the calculations do not seem to take into account - at least not fully - the policy measures decided in different countries to mitigate the economic impact of the shock and the various restrictive measures. However, fiscal policy measures to support corporate finance and, to some extent, profitability, and central bank measures to support the liquidity of the financial system have been unprecedented in many countries. These can at least be expected to mitigate the multiplier effects of the restrictive measures.

The assessments of various forecasters on the development of the world economy depend crucially on the forecast time. For example, the OECD forecast in early March estimated that world GDP would grow by more than 2% in 2020. Instead, Goldman Sachs Investment Bank 9.4. the published GDP forecast, -2 per cent in 2020, was very close to the IMF estimate. Both the IMF and Goldman Sachs dramatically revised their forecasts from those made before the crisis broke out. Such a correction of forecasts indicates exceptional uncertainty in the same way as uncertainty indicators calculated from financial markets.

The euro crisis that followed the financial crisis shows the particular vulnerability of the euro area to intra-regional disparities. Some Member States have been heavily indebted before the crisis, and the widening deficits of the crisis mean a great need for additional indebtedness. Although so far all Member States have been able to finance their increased deficits, in some countries interest rates have already risen. If highly indebted countries face acute financial difficulties, there is a risk of a recurrence of a situation such as the euro crisis. This would, of course, further significantly weaken Finland's economic operating environment.

5.2 Situation of the Finnish export sector ²⁷

The development of Finnish exports depends on the overall economic situation of the exporting countries. The weakness of the international economy described above will inevitably be strongly reflected in Finland's exports of goods and services this year. According to VM's basic forecast, exports are expected to shrink by 6 per cent this year.

The impact of the corona on the export sector differs from the normal economic downturn in export markets in two ways. First, the shock is large and affects virtually all markets at once. In this respect, it recalls the situation in autumn 2008 and 2009 in the context of the global financial crisis. Secondly, the epidemic itself and the constraints associated with it lead to quite different consequences from industry to industry, and in this respect the situation is also different from the global financial crisis.

One new factor is supply chain bottlenecks, as important parts of fragmented chains have been broken due to closure measures imposed by China. However, these problems seem to be diminishing as China has been able to reduce restrictions on industry and companies have been able to adjust their procurement.

The corona shock will lead to significant changes in the structure of demand, at least for some time. Due to mobility restrictions, foreign tourism is declining sharply. Although this is not a similar problem for Finland as for Italy, Spain or France, for example, the effects also apply to Finland. On the other hand, domestic tourism can be expected to recover faster than foreign tourism when restrictive measures can be lifted. This will improve the tourism balance.

The volume of air traffic is likely to remain below the level reached for a long time. This will inevitably affect the volume and profitability of Finnair's business.

²⁷ This section is based on the memorandum of Ville Kaitila and Markku Lehmus (Appendix 4):
<http://urn.fi/URN:ISBN:978-952-287-898-4>

However, the situation is similar for other airlines. It can therefore be assumed that the business field of airlines will change significantly. Which companies survive and which have to close depends not only on the initial situation and shock of the companies, but also on the subsidies and capital investments granted to them by the states.

The most endangered industry in the industry is the shipbuilding industry. Finland specializes in the production of cruise ships. Cruise operations are currently at a standstill and it is very unclear how quickly and to what level of activity this global business will recover. Some data suggest that provisions for 2021 would have clearly increased compared to 2019. If this happens, the impact on cruise ship orders is likely to be small.

However, there is no certainty about such a rapid recovery. In addition, it is possible that some shipowners with relatively large amounts of debt may temporarily go bankrupt. This could cause significant guarantee losses for Finnvera from guarantees for ship deliveries totaling approximately EUR 13 billion. Even bankruptcies would not necessarily mean that ships under construction and ordered would not be delivered. Central to this is the longer-term outlook for the cruise market. Staff reductions at Mayer Shipyard indicate that the shipbuilding industry has begun to adjust to the deteriorating outlook.

Energy technology is a significant part of the Finnish technology industry. Naturally, the weakness of general economic development also affects the export potential of this sector. However, the outlook for the sector depends to a large extent on the direction that climate policy takes. If efforts are made to promote recovery from the corona crisis by large-scale investors who are holding back climate change, for example by increasing energy efficiency, expanding the use of electronic means of transport and producing wind energy, good opportunities can be expected for Finnish production.

As an export sector, the large forest industry, like others, suffers from a general weakness in demand. This applies in particular to printing papers and construction timber as long as construction investment remains low in key market areas. On the other hand, the rapid growth of e-commerce supports the demand for packaging materials, for which Finnish production has good preconditions. Similarly, the market for hygiene products can be expected to develop well.

The other extreme in industry and related service production is communication technology. Restrictions on physical interaction have forced the transfer of various functions to a task remotely. The habit of a new way of working leads to a permanent increase in telework. This permanently increases the demand for the equipment and services needed for teleworking. Network technology, in which Nokia is a globally important player, will benefit from this, especially if at the same time the Chinese hardware and software vendors market

access is to be restricted in Europe and the United States. Similarly, there will be more demand for all kinds of software that supports teleworking. This can be of great benefit to Finnish production, even though Finland is lagging behind in the production of digital services, for example in relation to Sweden.

Obvious growth areas are medicine, health technology and various protective equipment. Finnish operators are also in a position to benefit from this, even though the actual manufacture of medicines and pharmaceuticals is insignificant in terms of overall economic significance (the share of value added was 0.8 per cent in 2018).

5.3 Operational capacity of the business sector

A sharp contraction in business will inevitably lead to a loss of capital and, to varying degrees, liquidity difficulties. For companies with strong equity, this is not a problem, as they can meet their temporary financing needs at a reasonable cost by borrowing or reducing their liquid assets. On the other hand, for some companies, the loss of equity can make it more difficult and disruptive to obtain loans, forcing them to suspend their operations due to liquidity problems.

Labor layoffs and (so far much fewer redundancies) have been an important means of limiting the impact of reduced sales on profitability. At the same time, however, as they prolong, they weaken the intellectual capital available to companies. To the extent that companies' operations are permanently interrupted, the organizational capital (so-called tacit information, routines, databases, customer connections) included in companies disappears. In this case, the corporate sector will not be able to respond to the growth in demand that will follow as the economy normalizes.

Extensive public sector support measures, in particular to ensure liquidity but also to support profitability and further equity, will alleviate the situation for companies. However, it is unclear to what extent companies will have to close down and to what extent the reduction in equity will significantly impair companies' risk-taking capacity and creditworthiness.

In any case, companies' perception of the economic situation has deteriorated dramatically. According to the Business Cycle Barometer published on 27 April, both the current economic situation and the outlook were estimated to be approximately as weak as in autumn 2008 and the beginning of the year.

2009, after the collapse of Lehman. Technology Industry 28.4. according to a published survey, calls for tenders collapsed in April to almost as weak as at the worst of the global financial crisis.

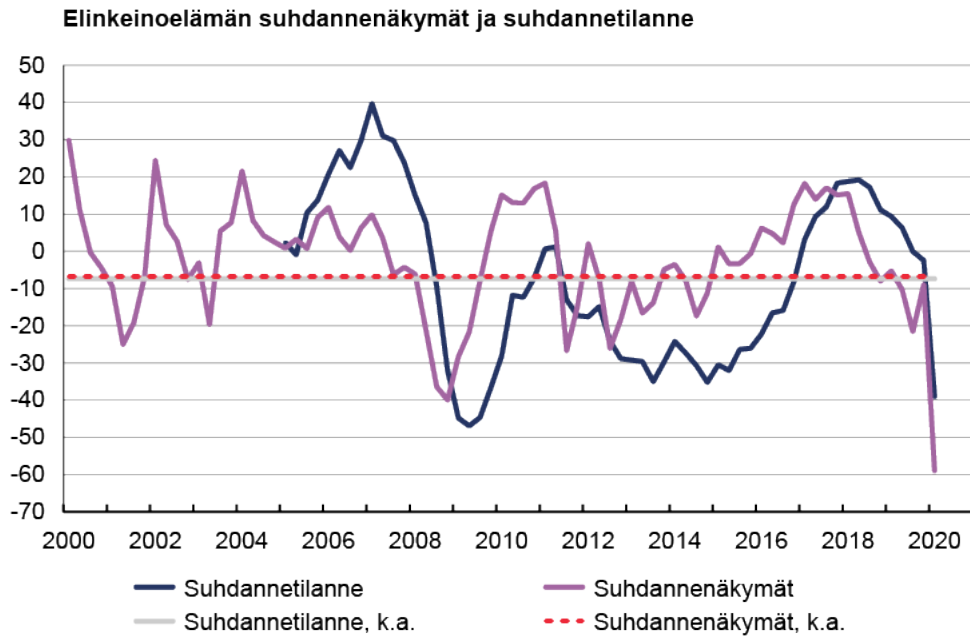


Figure 5.3. Business cycle outlook and economic situation

It is known from previous crises that the deterioration of companies' balance sheets, together with the uncertainty of the operating environment, significantly reduces companies' ability and willingness to take risks associated with the creation of new production capacity and uncertain development projects. In addition, research has shown that severe economic downturns reduce *do not want* risk-taking. In addition to the negative short-term impact on demand, impaired risk-taking and willingness to take risks also weaken the ability of the corporate sector to take advantage of new opportunities that open up over time and slow productivity growth.

Preliminary, as yet incomplete results of EK's industry investment survey do not yet point to a collapse in investment this year. On the other hand, at the beginning of the inquiry 10.3. there was no information yet on the significant restrictive measures decided by the government a week later. In addition, it is likely that the projects launched will be completed despite the deteriorating outlook. The impact on projects that are still in the preparation and design phase is likely to be much sharper.

5.4 Household consumption behavior

According to a survey conducted by the Finnish Competition and Consumer Authority in early April, half of households have either reduced normal consumption or postponed purchases

due to the corona epidemic or restrictions imposed to combat it. This is partly due to declining household incomes. 22% of households say their income has fallen or is falling due to the crisis. However, consumption has also been reduced by households, whose incomes have remained unchanged. Spending has decreased the most in leisure services, tourism, cafes and restaurants, and personal services²⁸

In many cases, however, respondents believe that consumption will quickly return to pre-crisis or even higher levels. Thus, at least a short crisis would lead to a postponement of procurement rather than a more permanent reduction in consumption. Consumption will grow rapidly as pent-up demand unfolds after the crisis.

However, the protracted crisis may also have more lasting effects on consumer behavior. Caution is not yet evident in the survey results: 7% of respondents say they have started saving the buffer for safety reasons. On the other hand, a third of respondents plan to prepare for future crises by saving more for a bad day. Risky investments in, for example, shares will be reduced by 6 percent of respondents. Only one per cent say they are moving from their own business to paid work.

The long-term effects of the crisis may be related to consumers' risk appetite, confidence and willingness to save. The KKV survey also included questions related to these indicators. However, based on the survey data, there has been no significant link between these psychological factors and household consumption and saving plans. Still, it is surprising that, according to the survey, the indicator of trust in other people is lower than at any time since 2002.

Statistics Finland 27.4. published by the Consumer Confidence Indicator²⁹ according to, consumer confidence in economic development is at the lowest level in measurement history. The indicator has been collected since 1995 and has a long-term average of -1.7. April, 1 to 19. According to a confidence survey, the indicator had fallen to -13.7, a lower figure than at the time of the financial crisis of 2009.

²⁸ Markus Anttinen, Tuulia Hakola-Uusitalo, Miika Heinonen, Katja Järvelä, Mika Maliranta, Mika Saastamoinen, Matti Sipiläinen: The impact of the corona crisis on households. Reports of the Finnish Competition and Consumer Authority 1/2020

²⁹ Consumer confidence [online publication]. Helsinki: Statistics Finland

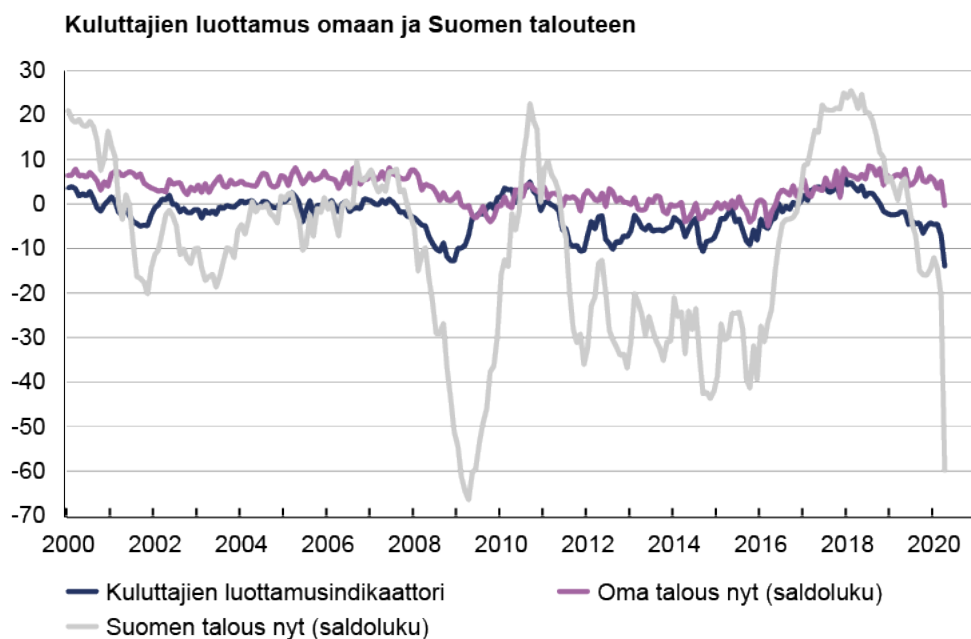


Figure 5.4. Consumers' confidence in their own and Finland's economy

Consumer confidence in the development of the Finnish economy has weakened particularly sharply. In contrast, respondents to the Consumer Survey of their own financial situation say they have remained unchanged compared to the previous year (balance figure zero). There are more believers in the improvement of their own financial situation in the next 12 months than those who believe in the deterioration of their own financial situation. Indicators of one's own financial situation and savings potential have fallen only slightly since the beginning of the epidemic. Instead, an exceptional number of consumers plan to reduce spending on consumer durables over the next 12 months. Housing-related intentions still reached average levels. In April, 12 per cent of consumers considered buying a home.

Overall, data measuring consumer expectations support the view that private consumption will develop weakly in the coming months. On the other hand, based on the inquiry of the KKV in particular, it can be assumed that once the epidemic situation has calmed down and restrictions have been removed, consumption may jump to new growth rapidly.

5.5 Labor market after the crisis

The corona epidemic has so far had the greatest impact on the service sectors. The largest number of redundancies is in accommodation and food service activities, trade, and administrative and support service activities. Relatively few affected sectors are public administration and construction. So far, the number of redundancies has increased relatively little.

Layoffs have grown strongly in all parts of the country. In terms of municipalities, the shock has been greatest in Uusikaupunki and its surrounding municipalities since Valmet Automotive closed due to a shortage of components at the Uusikaupunki car plant.

Of the various groups of workers, the redundancies have most often affected women and relatively young workers. Layoffs have increased at all levels of education. Those who lost their jobs in March-April are not particularly low-income. The income distribution of those laid off and the unemployed is relatively close to that of all employed people. In this sense, the encounter with unemployment is clearly different from normal years. For example, those made redundant and laid off at the same time in 2019 were clearly lower in income than those who lost their jobs during the corona crisis.³⁰

The economic crisis may have long-term consequences if it leads to an increase in long-term unemployment. Particularly problematic are shocks, the adjustment of which would require a large-scale transition to completely different types of work tasks. For example, during the recession of the 1990s, the construction sector suffered the most and it was not easy for those who lost their jobs in the construction sector to move to, for example, the care sector, where the need for labor increased.

However, the current crisis has so far targeted groups with a relatively low risk of long-term unemployment. In addition, the vast majority of those who have lost their jobs have been laid off. There are relatively few redundancies so far. For the time being, problems related to labor supply or the need to adapt do not seem to prevent employment from returning to pre-crisis levels if aggregate demand recovers rapidly after the crisis.

However, past economic crises have often had a long-term impact precisely because of rising unemployment. Some of those made redundant will cope with few consequences and will be re-employed quickly, but some of the job losses will lead to long-term employment difficulties and loss of income, even for the rest of their careers.

³⁰ <https://www.helsinki.fi/corona/koronakriisin-aiheuttaman-tyottomyyden-kohdistuminen/>

losses. Especially in the age groups close to retirement age, job loss often leads to permanent exit from the labor market. ³¹ Studies on redundancies during the recession of the 1990s in Finland also show that low-paid workers are particularly affected by job losses and that job losses in a downturn cause much greater and longer-term income losses than job losses in a better economy. ³²

5.6 Impact on productivity?

The crisis will most likely affect the functioning of societies in many ways, even over a longer period of time, although the nature of the impact is difficult to assess. ³³ From an economic point of view, it is above all a question of productivity development. Assessing productivity trends is difficult. Even the reasons for the decline in total productivity growth over the past 15 years around the world are still not properly understood.

There are several channels through which the crisis can have an impact on productivity developments. ³⁴ Transaction costs may increase, especially if international supply chains become less efficient. Labor mobility and the reallocation of factors of production between firms, industries and countries may decline. This can happen e.g. because low interest rates and various support measures keep low-productivity companies alive for an unnecessarily long time. Uncertainty about the future reduces the willingness of companies to invest and engage in research, development and innovation.

On the other hand, various restrictive measures have encouraged companies and also public sector actors to adopt such new practices - e.g. take advantage of teleworking and digitize business processes - which boost productivity. Part of the expansion of telework will remain permanent as both companies and employees have changed their practices and made related investments.

³¹ Kristiina Huttunen, Jarle Møen, Kjell G. Salvanes, How Destructive Is Creative Destruction? Effects of Job Loss on Job Mobility, Withdrawal and Income, *Journal of the European Economic Association*, Volume 9, Issue 5, 1 October 2011, Pages 840–870

³² Korkeamäki, Ossi & Kyrrä, Tomi. (2014). A Distributional Analysis of Earnings Losses of Dis- placed Workers in an Economic Depression and Recovery. *Oxford Bulletin of Economics and Statistics*. 76.

³³ In her memo, Maija-Riitta Ollila discusses the possible effects of the crisis on human behavior (Appendix 7): <http://urn.fi/URN:ISBN:978-952-287-898-4>

³⁴ Filippo di Mauro and Chad Syversen (2020), The COVID crisis and productivity growth. <https://voxeu.org/article/covid-crisis-and-productivity-growth>

This can have significant productivity-enhancing effects. In addition to streamlining the processes themselves, less office space is needed and time spent on work-related travel is reduced. In creative work, on the other hand, the impact can be different. Teleworking reduces the kind of social encounter that can be expected to lead to innovation (“coffee table discussions”).

Estimates of all these issues are mainly speculative at this stage of the crisis. The analysis prepared by an international **economic expert for our report gives a cautiously optimistic view of the reactions to international exchange.**³⁵ It is likely that in the future, some more emphasis will be placed on production security than on efficiency in the construction of production chains. However, Baldwin considers these effects to be relatively small due to the large benefits of splitting production and the often significant costs involved in radically changing practices. In commodity production, the effects are mainly on essential products such as food and medicine, etc. In these countries, policies in different countries are most likely to strengthen domestic production and reduce dependence on foreign supply.

The still life is different in the production of services. The spread of telework also has an impact through international exchanges. Once consumers and businesses are accustomed to procuring services online, the step towards procuring them across national borders is not long. Especially as technology helps to cross the language barrier more easily, the opportunities to utilize the resources of service production around the world increase. This increasing globalization of service production is having a positive impact on productivity while increasing the adjustment pressures on labor markets in developed countries.

In the case of Finland, the production structure of the initial situation and its relationship to the change in the structure of demand on the international market must be remembered. An increase in demand in high-productivity sectors with good starting points in Finland would naturally support good productivity development in Finland. Digital services and their physical and software platforms are likely to be major growth areas. In principle, this offers good opportunities for existing Finnish know-how. It would be essential to be able to take advantage of them.

³⁵ Richard Baldwin (2020): *Hysteresis in Globalization: What are the Consequences of the Corona Crisis?* (Appendix 3: <http://urn.fi/URN:ISBN:978-952-287-898-4>)

5.7 On the basis of which outlook economic policy should build?

Recessions are different. Historical experience strongly suggests that global recessions are deeper and longer than individual country recessions. Similarly, recessions associated with the financial crisis are also deeper than average and **recovery is slower than average.**³⁶ **The current crisis is exceptionally simultaneous and covers virtually the whole world.** On the other hand, it has not yet turned into a financial crisis in which the functioning of the financial system would have been severely disrupted.

The recession in Finland in the 1990s and the long recession that followed the 2008 financial crisis show that the blind can have quite different longer-term effects depending on the nature of the shock, the vulnerability of the economy and policy reactions. The crisis of the 1990s was national, although a similar financial crisis was experienced at the same time in Sweden. The long-term consequences of the recession were mainly linked to unemployment and labor market integration.

During the crisis of the 1990s, the number of jobs fell by almost 20% and unemployment rose to around 17%. Unemployment fell slowly despite the rapid economic growth that followed the crisis, as the demand for new work that emerged was significantly different from that in which the “vacated” labor force had previously been employed. Compared to the past, new jobs were created relatively more in the open sector and it focused more on higher-skilled jobs. Labor market mechanisms, as well as the creation of new skills through education, were not strong enough to deal with the shock. The weak labor market situation also hampered the employment of new labor entering the labor market in a way that has been reflected in the income development of the cohort concerned on a permanent basis.

In terms of productivity, the 1990s crisis was not a crisis at all. The destruction of low-productivity jobs in the crisis was even likely to increase productivity, and in new fast-growing production, high-productivity ICT production was key. Although there was a large notch in production for several years, the so-called the trajectory of potential production did not change significantly with the recession.

³⁶ Prakash Kannan, Marco Terrones, Alasdair Scott (2009), From recession to recovery: A long and hard road. <https://voxeu.org/article/imf-recession-research-weaker-average-recovery>

The long recession that followed the global financial crisis, on the other hand, was, above all, a decline in productivity in Finland, while employment losses fell short of about one-fifth of the recession of the 1990s. Many high-productivity jobs were destroyed by export production (both in the ICT sector and more broadly in the technology industry), but the relatively good income development of households kept private consumption on a reasonable path and helped maintain domestic jobs. The good functioning of financial markets, low interest rates and a very stimulative fiscal policy in Europe supported this development. On the other hand, this time external competitiveness improved slowly, in contrast to the recession of the 1990s, when the weakening of the exchange rate quickly remedied the eroded competitiveness.

In terms of longer-term development, the most difficult consequence of the long recession was precisely the permanent decline in productivity levels and the fact that its growth rate remained slower for a long time. With the long recession, Finland drifted into a lower potential output trajectory due to weak productivity growth. In part, weak productivity growth has been a global phenomenon, but Finland's productivity growth has also lagged behind comparable countries such as Sweden.

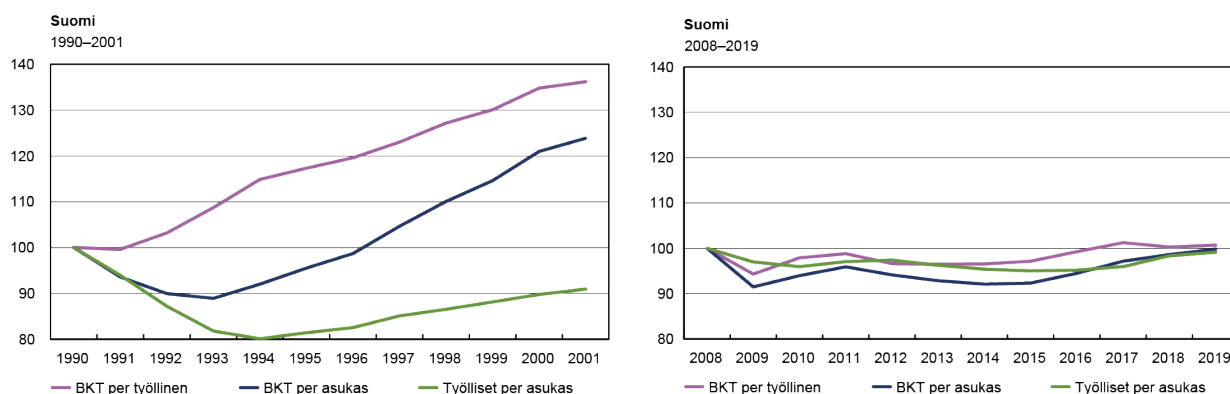


Figure 5.5. Growth and its components after the recession of the 1990s and the financial crisis of the 21st century

The coronary recession that is now unfolding has features of both previous crises, although at this stage it is still impossible to say with certainty what nature the crisis will take. The focus of production and lay-offs (increase in unemployment) has been in the domestic sector, reflecting the fact that the main reason for the decline in activity has been domestic restrictions on people-to-people contacts and business. However, it is clear that production and employment in the export sector will also suffer in the coming months. So far, this has been an employment problem for growth, not so much a productivity problem.

What is crucial for economic development in the next year or two is how quickly we can get rid of the restrictions that weigh on economic activity at home and abroad, and how the multiplier effects easily associated with weakened employment and income generation can be managed.

We know from past crises that declining corporate and household incomes can lead to severe debt management problems, falling asset prices and credit losses, and a self-reinforcing downward spiral. Especially in Finland, but also in many other European countries, this risk is reduced by the fact that interest rates are low and the banking system is in good shape. The Finnish state also does not have the same borrowing restriction as in the mid-recession of the 1990s, when the state's creditworthiness was threatened.

It can therefore be assumed that if most of the restrictive measures were lifted in Finland in the coming months and the international economy recovered, the multiplier effects would remain small. This view is supported by e.g. the findings on household behavior reported above. Similarly, the above observation on the labor market situation is in line with this thinking: redundancies and redundancies have so far affected groups of workers with a relatively low risk of drifting into long-term unemployment.

The Ministry of Finance and the Bank of Finland the baseline scenarios dress such a short-term crisis as Numbers. In both cases, GDP will shrink by about 5 percent this year. Of these, the Bank of Finland's scenario in particular leaves the crisis very short-lived. In it, GDP would return to its previous career already in 2021. In VM's calculation, growth in 2021 will be close to potential growth at 1.3 per cent. Due to these differences, the deficit and debt developments in the VM's calculation are clearly worse.

Table 5.1. The "optimistic" scenario of the Bank of Finland and the Ministry of Finance ³⁷

Optimistic scenario	2020		2021		2022		2023		2024	
	VM	SP	VM	SP	VM	SP	VM	SP	VM	SP
% Change in GDP	-5.5	-5.0	1.3	7.0	1.3	1.0	1.0		0.8	
Unemployment rate,%	8.0	9.0	8.1	7.0	7.9	7.0	7.8		7.8	
Employment rate,%	71.2	71.0	71.3	73.0	71.7	73.0	71.8		71.8	
General government deficit, as a percentage of GDP,%	-7.2	-6.0	-4.0	-2.0	-4.1	-2.0	-3.8		-3.7	
Structural primary balance as a percentage of GDP,%	-4.5		-2.0		-2.8		-2.8		-2.9	
Government debt as a percentage of GDP,%	69.1	69.0	71.5	66.0	73.8	67.0	76.3		78.7	

³⁷ Source: Ministry of Finance Economic Review Spring 2020, published 16.4. ; Bank of Finland's Euro and Economy, published on 7 April 2020

However, it seems increasingly obvious that the restrictions on reducing activity will not be completely eliminated in the coming months, either in Finland or elsewhere. Regardless of the existing restrictions, uncertainty about both the development of the epidemic (and the consequent possible new restrictions) and further economic development will curb the spending of money by both households and businesses for a long time to come.

It is also important for Finland that, regardless of the development of the domestic situation, the development of the international economy can be expected to remain sluggish at best. Nor can the possibility be ruled out that the situation in the euro area will escalate into a genuine financial and sovereign debt crisis. At the heart of such a crisis would be Italy, making the situation substantially more difficult than the debt crisis concentrated in Greece.

Even if the euro crisis did not recur, Finland's growth in such conditions could remain below the potential output trajectory estimated for several years. VM and SP have also presented pessimistic scenarios based on the assumption that restrictions will remain in force for a longer period of time both in Finland and elsewhere. In these scenarios, GDP will shrink by as much as 12-13% this year. SP's scenario is again more optimistic about growth in the coming years. However, both scenarios produce a very poor outcome for public finances. By 2022, the government debt-to-GDP ratio would rise to close to 90 percent.

Table 5.2. The “pessimistic” scenario of the Bank of Finland and the Ministry of Finance ³⁸

Pessimistic scenario	2020		2021		2022	
	VM	SP	VM	SP	VM	SP
% Change in GDP	-12.0	-13.0	-0.2	4.0	1.5	3.0
Unemployment rate,%	11.3	11.0	12.6	11.0	12.5	10.0
Employment rate,%		68.0		69.0		69.0
General government deficit, as a percentage of GDP,%	-10.5	-10.0	-8.1	-7.0	-8.1	-6.0
Structural primary balance as a percentage of GDP,%						
Government debt as a percentage of GDP,%	76.2	79.0	82.8	84.0	87.8	87.0

The most credible option is difficult to specify due to the high level of uncertainty on key issues. However, we need some macroeconomic starting point for reflection on economic policy. We end up using a “middle ground” option with a 9% contraction in GDP this year, but

³⁸ Source: Ministry of Finance Economic Review Spring 2020, published 16.4.; Bank of Finland's Euro and Economy, published on 7 April 2020

then returns to a trajectory of approximately previously estimated potential growth. However, the fall in GDP will remain long-lasting. The essential message from such a scenario is that the ratio of government debt to GDP will continue to grow rapidly, albeit not as sharply as in the more pessimistic scenarios of VM and SP.

Table 5.3. The “middle ground” scenario of the working group

The working group's own scenario	2020	2021	2022	2023	2024
% Change in GDP	-9.0	0.9	1.3	1.2	1.1
General government deficit, as a percentage of GDP,%	-9.0	-6.0	-6.1	-5.6	-5.4
Structural primary balance as a percentage of GDP,%	-5.2	-3.0	-4.0	-4.2	-4.5
Government debt as a percentage of GDP,%	72.9	77.0	80.7	84.3	87.7

Such a scenario may seem very gloomy and it is, it will be a decade before GDP reaches its previous peak. But there is no way such a recession is impossible. The period of long recession that began in 2008 was very similar. It also called for a decade to return to GDP levels. Relative to the pre-crisis trend, our scenario is even slightly more positive. In 2030, we would have lost less than 20 percent of GDP against the trend, compared to 25 percent at the end of the long recession.

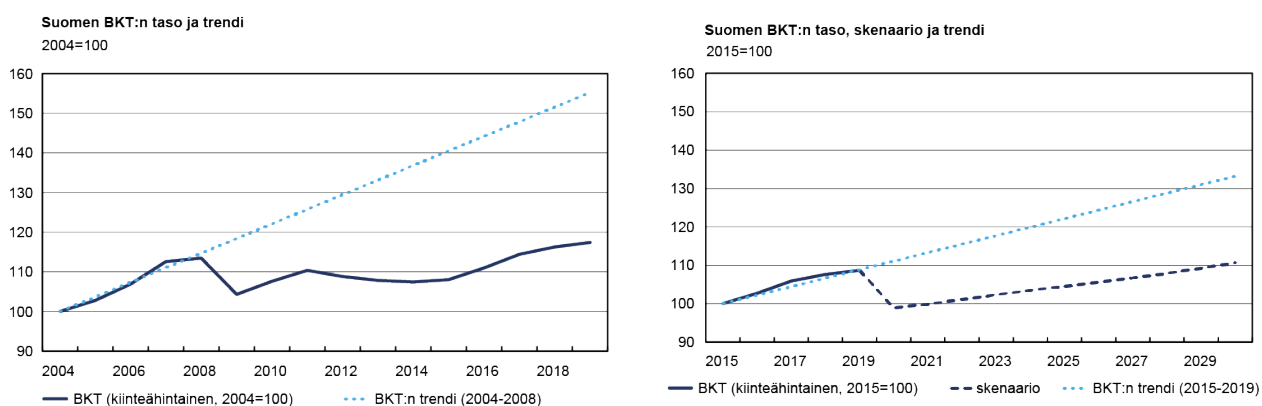


Figure 5.6. The level and trend of Finnish GDP, as well as the level of Finnish GDP in relation to the trend and the working group's scenario

The above observation of the long drag of deep employment in a deep recession is very relevant in this context. Once again, we cannot assume that the new jobs created will be similar to those lost. After the shock experienced by companies

can be expected to be cautious for a long time in making investments and hiring staff. On the other hand, our speculation about the impact of the crisis on productivity does not suggest that productivity growth will automatically accelerate. Rather, there are reasons for the slowdown. Of course, a new kind of breakthrough in the digital economy in service production offers opportunities, but the big question is whether Finland's vulnerable business sector will be able to take advantage of them.

Our scenario is not a forecast but an outline, which we think makes sense, despite its uncertainty, as one of the starting points for economic policy-making. In our opinion, it is more plausible than the basic forecasts of the VM or SP or the darkest scenarios. Economic policy needs to prepare for a world like this in a context of unchanging politics. We can end up with a better career with good luck, but also clearly worse. However, a mistake in the direction of a little too pessimism is a smaller mistake than a mistake in excessive optimism. The goal of economic policy must, of course, be to end a better growth trajectory than outlined. To the extent that this is not possible, the best possible adaptation must be sought.

6 Fiscal policy challenges

Once the restrictions are lifted, economic activity can begin. The recovery should be aided by stimulative fiscal policies. Otherwise, there is a risk of being stuck in a spiral of bankruptcy and unemployment for a long time. The problem, however, is that Finland already had a sustainability deficit in public finances before the crisis. A stimulative fiscal policy will contribute to widening budget deficits and accelerating public debt. These contradictions in fiscal policy are illustrated in this chapter

calculations prepared by the Ministry of Finance and the Bank of Finland.

6.1 The start of growth after the crisis

In the first phase of the crisis, economic policy has focused on household livelihoods, corporate liquidity and, in part, profitability. The aim has been for the business community to be able to “winter” until the restrictions can be lifted and there are preconditions for the start of activity. However, the removal of restrictions will not automatically trigger an increase in activity. Uncertainty about the epidemic and economic developments curbs the use of money by both households and businesses, even at best. It is also likely that export growth will remain weak for a long time to come. In some respects, there may be pent-up consumer demand, but several factors argue that the recovery in domestic demand will remain subdued. A V-shaped return to economic normalcy is hardly to be expected.

The purchasing power of households that are widely affected by layoffs is weaker than usual. Some households are heavily indebted, and the resulting debt service burden has been alleviated with temporary repayment leave. Indebtedness and uncertainty are likely to increase the prudent savings of able-bodied households and thus reduce consumer demand. Municipalities are financially cramped and lay off their employees.

In the case of companies, it can be considered very likely that investment will remain low. In conditions of weak demand, there is no need to expand capacity. Many companies have gone bankrupt and companies that have avoided it also suffer from poor profitability. Weak export prospects and uncertainty reduce the willingness to invest, even if access to finance is secure. Uncertainty about the outlook is likely to delay investment decisions, regardless of other factors.

If real estate prices also fall significantly, housing construction and construction activity can be expected to contract more broadly. Under these conditions, there is a risk that the economy will be stuck in a state of low activity and high unemployment - or that there will even be a self-sustaining downturn in the economy, where weak demand will reduce production and income generation, further reducing domestic demand.

The European Central Bank seeks to support economic activity with its monetary policy, ie by keeping policy rates at record lows and by buying large amounts of securities from the market. Through its actions, the central bank can safeguard the stability and operational capacity of the financial system. However, in terms of the recovery in domestic demand, the effectiveness of monetary policy can be estimated to be limited ("you can't push with a rope") when, in practice, interest rates can hardly be lowered. That is why the fiscal policies of the member states are now key, and therefore strong stimulus is expected in most countries, especially those with good creditworthiness. Due to the importance of exports, it is extremely important for Finland that there are conditions in as many countries as possible to support domestic demand. Coordinated fiscal policy expansion across the EU would support the economies of all Member States through the combined effects of both domestic and non-domestic policies. In that case, the deterioration of the budget of each member state could be small.

It is very likely that growth in Finland will not start properly without the support of the fiscal stimulus. The first requirement for fiscal policy is that the so-called automatic stabilizers are allowed to operate even after the acute phase of the epidemic. This means that the rapidly growing general government deficit due to weak activity and special support measures will not be offset by tightening fiscal policies in the early stages of economic recovery. On the contrary, as the crisis eases, there is a need to complement the operation of automatic stabilizers with other measures.

The fiscal stimulus will increase tax revenues and reduce unemployment spending, allowing the stimulus to support employment and partially finance itself. In the context of the crisis, there is also concern that long-standing high unemployment through various mechanisms will reduce labor supply in the long run (so-called hysteresis), which would make it more difficult to rebalance public finances after the crisis. Overall, there will soon be strong grounds for reviving domestic demand through fiscal policy at a time when the austerity measures needed to control the epidemic can be lifted.

6.2 The challenge of fiscal sustainability

Fiscal deficits and indebtedness were already rising before the crisis. The epidemic is exacerbating the situation. According to the latest forecasts, public debt-to-GDP ratio in 2020 will be about 10 percentage points higher than in previous calculations. In the new calculations, the debt-to-GDP ratio will increase to 80% in 2025 and more than 90% in 2030. However, this is a projection and not a forecast. However, it is clear that debt reduction in the 2020s will require public sector adjustment measures that will slow the pace of indebtedness.

The sustainability of public finances is usually assessed in the so-called sustainability gap. The sustainability gap indicates how much the general government deficit should be reduced in order to balance public expenditure and revenue in the long run. Last autumn, the Ministry of Environment estimated the sustainability deficit at around 4% of production. In the latest calculations, the sustainability gap is in the order of 6-7%. It follows from many uncertainties that no far-reaching fiscal policy conclusions can be drawn from the size of the sustainability gap.

The sustainability gap calculations are mainly influenced by the increase in age-related expenditure, ie expenditure mainly on health care and pensions. If the effects of the crisis on employment development are not long-term and the productivity of public sector service production does not change significantly, the sustainability deficit in these respects will remain unchanged. However, age-related expenditure as a share of GDP will increase as output growth is slower than before, according to the new forecast. Public debt service costs also affect the sustainability of public finances. Rising public debt is increasing debt service costs, but on the other hand, low interest rates keep the costs of managing increased debt still reasonable.

The sustainability gap is a useful concept when looking at public finances, but its operational relevance as a policy guideline is limited. In the medium term, the minimum requirement for government finances is that government debt (debt / GDP) can be stabilized at a tolerable level within a reasonable timescale. This is important because the creditworthiness of the state may otherwise be called into question in the financial markets. Excessive indebtedness increases the vulnerability of the national economy, especially in times of disruption, as a deterioration in the outlook could then lead to more difficult government borrowing through a lack of confidence and risk premiums. Moderate indebtedness is a prerequisite for social resilience or crisis resilience.

There are no unequivocal answers to the questions of what is a tolerable level of indebtedness and what is an acceptable timetable for consolidating indebtedness. It can be said that the indebtedness of a very large number of developed countries is already close to or above 90%. In other Nordic countries, however, indebtedness is clearly lower. As regards the timing of the adjustment, it is more a question of the measures decided upon and their credibility than of the dates on which the deficit will shrink.

Finland's public indebtedness will increase sharply this year due to both large general government deficits and a sharp decline in output. In the future, however, it can be considered likely that the growth rate of output, albeit modest, will be higher than the interest rate on government loans (which is now negative in many maturities). This significantly reduces the burden of indebtedness. With these prospects, it is not unrealistic to assume that the interest rate on debt may remain below or in the same range as the economy for a long time to come.

6.3 Fiscal stimulus and public economic adjustment

The purpose of the fiscal stimulus is to ensure that domestic demand translates into growth that supports economic activity. It is needed in a context of weak export prospects and weak domestic demand. The size of the fiscal stimulus needs to be assessed from several perspectives. The magnitude of the economic problems suggests that a large-scale fiscal stimulus of several percentage points (relative to GDP) should be pursued. Combined with the fiscal measures already taken in the past and the impact of automatic stabilizers, this will inevitably lead to a very large public budget deficit.

Indeed, another starting point for the sizing of the fiscal stimulus is that it must not lead to unsustainable public debt. The problem, however, is that the duration of the crisis is difficult to assess in the current context. Public debt can help reduce economic damage if the crisis is short-lived. However, debt reduction and greater adaptation to the new situation will be inevitable if the crisis continues for a very long time. In this respect, the outlook will hopefully brighten before the timing of the stimulus decisions.

The level and development of Finland's public debt is illustrated in Figure 6.1. Our public indebtedness was very low in the 1990s, but rose rapidly to around 60 percent during the recession. After that, indebtedness declined for quite some time and significantly but returned to growth after the global financial crisis. Last

has moved around 60 per cent, but the interest rate crisis is now leading to a significant increase in indebtedness. Without adjustment measures, the increase in indebtedness also threatens to remain rapid and rise to 100%. This is historically new, though not exceptionally exceptional internationally: the average level of indebtedness in the euro area has been around 90% for years, and in the next few years it will most likely rise sharply above 100%.

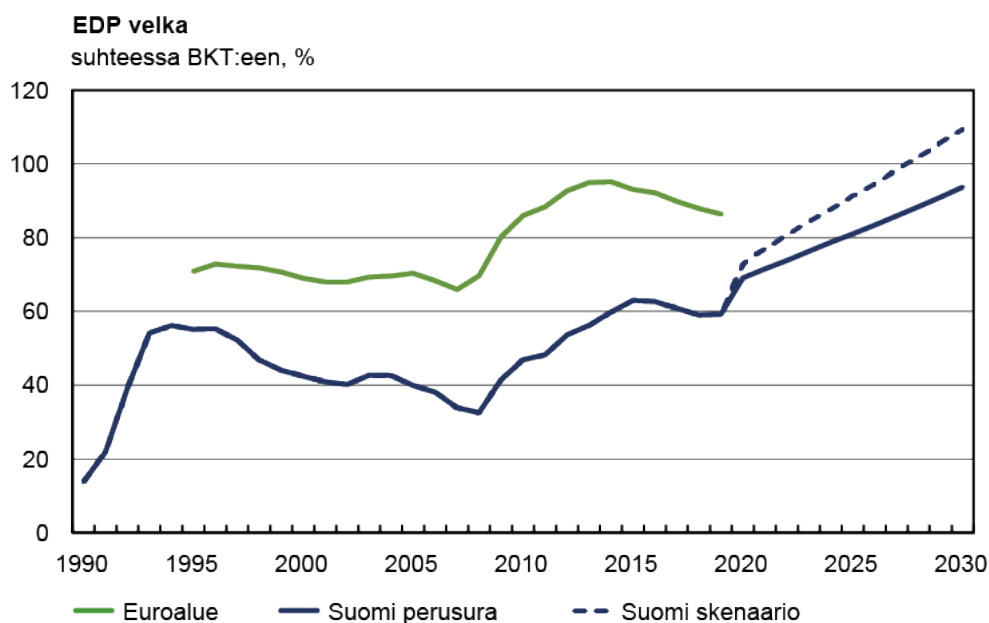


Figure 6.1. Public debt in Finland, the euro area and the basic career of the Ministry of Foreign Affairs and in the working group's scenario

- The following are the Ministry of Finance (Ministry of Finance, Annex 14)³⁹ and the Bank of Finland (SP, Annex 10)⁴⁰ the calculations illustrate the possible effects of fiscal policy. The difference in estimates also highlights the high level of uncertainty involved. The review assumes that fiscal policy will be one percentage point (relative to GDP) more stimulative next year than in the baseline scenario. In addition, fiscal policy is assumed to be tightened by a permanent percentage point each year between 2023 and 2025. The simulation thus performed therefore involves a temporary recovery and a permanent adjustment of public finances. This review is not a recommendation but only an Exercise based on unchanged economic structures. Policy changes have been made in the VM's calculations either

³⁹ Ministry of Finance 2 (Annex 14): <http://urn.fi/URN:ISBN:978-952-287-898-4>

⁴⁰ Bank of Finland (Appendix 10): <http://urn.fi/URN:ISBN:978-952-287-898-4>

to a basic career (VM's recent forecast) or a more pessimistic option for weaker growth, which we believe is beginning to be more realistic. Some remarks in Table 6.1. on the basis of the results presented can be presented as follows:

- **Ministry of Finance *the basic groove* the economic contraction is expected to remain at just over 5% this year. After that, the economy will embark on a path of slow growth, which will henceforth be at a lower level than the previous growth path. The general government deficit will be just over 7% of GDP this year, and the deficit will remain high throughout the period under review. Government gross debt as a share of GDP rises to more than 90 percent.**
- In the political career, the stimulus in 2021 will accelerate economic growth in the same year. Growth will slow in 2022, with the recovery slowing down, and in 2023-2025, economic growth will be slowed by the continued annual tightening of fiscal policy. Under this option, the deficit will decrease and indebtedness will stabilize at around 75% towards the end of the decade. Even then, it must be remembered that the aging of the population will continue and, with the current outlook, will lead to an increase in indebtedness again in the 2030s.
- **Ministry of Finance *in a career of weaker growth* the economy will shrink by as much as 9 percent this year, after which it will remain on a lower-level path of slow growth. Fiscal deficits are higher than in the baseline scenario and indebtedness will rise sharply to over 100 percent within a decade.**
- The pace of temporary stimulus and permanent fiscal adjustment measures will grow faster next year but will then continue at a slow pace in the lower growth trajectory. A total of 3% adjustment measures will reduce the general government deficit in the option. However, indebtedness will continue to grow throughout the decade, reaching a level of about 90 percent by the end of the decade. If, on the other hand, the public sector adjustment continues by one percentage point in 2024, the increase in indebtedness is estimated to come to a halt below 90% by the end of the decade.

Table 6.1. Growth in the basic career of the Ministry of Foreign Affairs and in the career of weaker growth with and without fiscal policy

	2020	2021	2022	2023	2024	2025	2026	2027	2028				2029	2030
Basic (A)														
GDP growth, %	-5.5	1.3	1.3	1.0	0.8	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.2	1.3
Deficit as a percentage of GDP	7.2	4.0	4.1	3.8	3.7	3.8	4.1	4.3	4.8	5.1	5.5	5.1	5.5	5.5
Debt as a percentage of GDP, %	69.1	71.5	73.8	76.3	78.7	81.0	83.4	85.9	88.4	91.0	93.7	91.0	93.7	93.7
A + resuscitation and adaptation														
GDP growth, %	-5.5	3.3	0.3	0.4	0.2	0.5	1.0	1.1	1.1	1.1	1.1	1.1	1.2	1.3
Deficit as a percentage of GDP	7.2	6.0	4.2	2.8	1.7	0.8	1.0	1.2	1.6	1.9	2.2	1.9	2.2	2.2
Debt as a percentage of GDP, %	69.1	72.2	75.1	77.0	77.7	77.4	76.9	76.4	76.0	75.7	75.6	75.7	75.7	75.6
Weaker growth (B)														
GDP growth, %	-9.0	0.9	1.3	1.2	1.1	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.2	1.3
Deficit as a percentage of GDP	9.0	6.0	6.1	5.6	5.4	5.6	5.8	6.1	6.6	7.0	7.4	7.0	7.4	7.4
Debt as a percentage of GDP, %	72.9	77.0	80.7	84.3	87.7	91.2	94.7	98.3	101.9	105.7	109.5	105.7	109.5	109.5
B + resuscitation and adaptation														
GDP growth, %	-9.0	2.9	0.3	0.7	0.6	0.5	1.0	1.1	1.1	1.1	1.1	1.1	1.2	1.3
Deficit as a percentage of GDP	9.0	8.0	6.1	4.6	3.4	2.5	2.8	3.0	3.4	3.7	4.1	3.7	4.1	4.1
Debt as a percentage of GDP, %	72.9	77.6	82.0	85.0	86.7	87.7	88.2	88.9	89.6	90.5	91.5	90.5	91.5	91.5

The Ministry of Foreign Affairs' review is based on situation-specific considerations and assessments made by officials on developments. An important assumption is that, due to the circumstances, a one-off recovery has a stronger effect (the "factor" is 1) than a permanent adjustment (the "factor").

0.5) and that the adjustment will continue until the increase in the debt ratio stops. The Bank of Finland has analyzed the effects of fiscal policy using the Aino macro model, which is based on theoretical assumptions and equations that track economic behavior. These approaches are quite different, which is also reflected in the differences in results. In addition, the Bank of Finland assumes that the adjustment is similar in size to stimulus. SP's estimates of the impact of fiscal policy on output and the general government deficit are presented in Table y, where the figures refer to *deviation from basic career*:

Table 6.2. Bank of Finland scenario calculations

	2021	2022	2023	2024	2025	2026	2027
Level of GDP, %	0.4	0.7	0.6	0.4	-0.1	-0.5	-1.0
Deficit, % points, (deviation from baseline)	2.0	2.0	1.0	0.0	-1.0	-2.0	-3.0

It is worth emphasizing the uncertainty in the calculations, which is also reflected in the fact that the estimates of the Ministry of Foreign Affairs and the Bank of Finland differ greatly. In the SP's assessment, the effectiveness of the fiscal stimulus is quite small, but the impact on the balance of public finances in the short run is of the same order of magnitude as in the Ministry of Finance's assessment. On the other hand, the SP estimates that, unlike the VM, the economy will return to its previous growth trajectory fairly soon. There are a number of technical details involved in the differences in the reviews presented (cf. the annexes). One is that the Ministry of Foreign Affairs has assumed fiscal policy to be public expenditure (e.g.

investment), while SP assumes that both recovery and blackmail will take place to the same extent through expenditure and taxes.

According to the SP model estimate, the recovery through expenditure will have a somewhat stronger impact on economic activity in the short run, while the tax recovery will be more effective in the long run. This has to be seen against the background that public spending is directly part of aggregate demand, while part of the tax stimulus will increase household savings in the short run. On the other hand, tax stimulus has the advantage of improving incentives for work and entrepreneurship in the longer term. However, uncertainty needs to be emphasized: there is no reliable research data on these issues, and especially in the current crisis, behavior and policy implications may be different than otherwise. As noted above, the recovery in the crisis may have a special role to play in reversing the downturn and boosting economic activity.

The simulations presented illustrate the objective conflicts of fiscal policy. The economy can be revived (also more strongly than expected), but at the same time the need for measures to reduce deficits in later years is growing. The conflict of goals is, of course, more difficult the greater the economic contraction and the lower the growth trajectory. It should also be emphasized that the above analysis has assumed that the policy will be pursued within existing structures. At best, economic policy contradictions can be much smaller if different measures can be used to accelerate productivity growth, increase the efficiency of public service production or raise employment rates. Such a growth policy would be necessary regardless of the balance of public finances, as it would make it possible to avoid the "lost decade" scenario on which the calculation was based. These structural issues will be returned to later.

7 Wider policy issues

The economic policy issues raised by the interest rate crisis are not limited to immediate crisis management issues or fiscal policy stance. A bad economic downturn is a bad starting point for the longer-term development of society. The importance of growth policy is emphasized. At the same time, its severity increases as the room for maneuver in public finances weakens. The recession often overshadows issues that will not be resolved for years to come. Climate policy is such a thing. On the other hand, climate policy also offers natural opportunities for stimulus measures. As in previous recessions, the corona crisis treats different people differently. An important divisive factor is age: restrictive measures are primarily aimed at protecting the lives of older people, while their economic impact will be borne by younger generations. This raises the question of the validity of society's "generation pact". The role of the state has been emphasized in various ways in a crisis situation. However, the burden of the crisis on public finances calls into question how large the public sector can be borne by the economy. This chapter looks at these selected longer-term challenges of the crisis.

7.1 Role in growth policy in many areas

At the end of Chapter 5, the scenario of economic growth over the next 10 years, taken as the starting point for economic policy deliberations, would mean a new lost decade. The consequent stagnation of living standards, as well as the destabilization of public finances highlighted in Chapter 6, make it necessary to consider the conditions for strengthening growth in the longer term.

The key to the growth outlook for the next few years is the economy's ability to recover from the recession. It has already been stated above that it is important to mitigate the effects of the shock on the viability of companies and the extreme situations of its loss, bankruptcies and the associated loss of organizational capital. Similarly, the need to support the start of growth with a stimulative fiscal policy has emerged at a time when the restrictive measures required by the epidemic are largely being phased out.

However, in terms of recovery or longer-term growth, it is not enough for the economy to be able to produce the same things as before with past efficiency. With the crisis, the structure of demand is likely to change faster than it would have been without the crisis, and as long as the growth of the Finnish export market is weak, better competitiveness is needed for the same export success. Policies should support the diversion of resources to production that meets new demand and even so that productivity in new or growing production is as good as possible. At the same time, policies should support the changes needed in the long term, in particular climate change mitigation and adaptation.

While it is difficult to predict exactly what kind of production will be in high demand in the future, it is somewhat clear that the demand for digital services and the technologies that support them is growing rapidly. Similarly, demand for energy-saving and clean energy-producing solutions, as well as health technology, can be expected to grow strongly. Succeeding in these areas requires effective innovation.

Despite its many strengths, Finland's relative position as a producer and user of innovations has weakened over the past ten years. Investments in innovation by the private sector in particular, but also by the public sector, have decreased. At the same time, the rise in educational attainment has stalled; Compared to other developed countries, for example in terms of the share of the population with higher education, Finland has become a middle-class country.

The importance of the good functioning of the education system is not limited to the skills needed in innovation activities. Adequate training is a prerequisite for the workforce's opportunities for employment in productive jobs. It is very difficult for those who have missed secondary education to find employment at all and their risk of exclusion is high.

One of the challenges of growth policy is to direct sufficient resources to support innovation and education in a situation where public finances will inevitably face high savings needs in the coming years. One way to alleviate this contradiction is to seek to target public funding to those areas where it is most beneficial or where there are virtually no good alternatives. Early childhood education and primary and secondary education are at the top of the list of priorities in this regard. In university education and adult education, the possibilities of private funding should also be assessed.

Another challenging issue for growth policy concerns in particular the risk-taking capacity of high-productivity businesses. The difficulties of the business field, especially in so far as they spread from the restaurant, which is now at the center of restrictive activities, from tourism to culture to industry and services requiring technological know-how, are eroding entrepreneurs' own capital and thus their risk-taking capacity. At the same time, realized risks

may reduce risk appetite. At its worst, Finland's strongly developed innovation ecosystem deteriorates when key companies are unable to make the necessary risk investments. Knowledge capital that has already been created can quickly disappear.

Supporting the provision of risk finance, if necessary through innovative government financial instruments, is one logical policy response. On the other hand, taxation should be able to take into account incentives for risk-taking, despite the pressure on public finances to tighten taxation as a whole.

The third important thing to achieve good productivity is effective competition. The crisis has led to extensive support measures in the business sector both in Finland and elsewhere, while the interpretation of state aid regulations has been relaxed. There is an obvious danger that these, together with low interest rates, will undermine the effectiveness of competition. Due to this, as well as public expenditure savings, there is a need to reassess business support.

The competition can also be used in some publicly funded services. However, it is not well suited for all tasks. Even in such tasks, there is a lot of potential for efficiency by taking advantage of the potential of new technology. However, this often requires a radical change in practices.

Securing economic growth also requires an adequate supply of labor and a flexible diversion of labor to those tasks where it is in demand. Right in the midst of a recession, labor supply is not as biting a constraint as it was before the crisis broke out. However, it can become a bottleneck when growth starts. This is all the more likely to be the more diverse the structure of the new demand and the higher the unemployment and inactivity during the crisis. Measures to improve labor supply and matching are therefore part of growth policy. On the other hand, the discussions on the measures required by the employment target set by the incumbent government show that it is quite difficult to decide on such measures.

The ability of the labor market to respond, resilience, to various shocks is also a relevant longer-term policy issue. Without it, shocks will repeatedly lead to underemployment situations where production will remain below its potential for a long time. Finland has unfortunate experiences of this both in the 1990s and in the years following the global financial crisis. One part of the required resilience is downward wage flexibility when the survival of a company requires it. It is not easy for the state to directly influence the functioning of the labor market in this regard. This became clear in the negotiations on the so-called competitiveness agreement during the previous government. Nevertheless, the problem cannot be ignored.

7.2 Climate policy cannot be afforded to leave to the feet of the corona

In recent months, CO₂ and other emissions have fallen sharply, which has also been reflected in a marked improvement in the quality of the environment in some places. However, this does not change the basic view that the risks to humanity associated with global warming are high and, in the long run, of a completely different order of magnitude than the problems caused by the corona crisis.

It is estimated that global emissions could decrease by 5-6% this year compared to the previous year. This would be a record reduction, but completely inadequate from the point of view of global warming. Even if the decline in emissions continues at the same rate for 10 years, the climate policy target (1.5 degrees warming from pre-industrial times) would still not be achieved. Finland's greenhouse gas emissions have not decreased during 2014–2019, but this year the emissions are estimated to decrease significantly, if only temporarily.

Recent developments suggest that the much-talked-about “degrowth” (negative growth) is a thistle path to combating global warming. The economic downturn is causing a lot of human distress and social problems, and as political contradictions are likely to continue, it will continue. Because of them, the fight against global warming threatens to be forgotten, as was the case, at least to some extent, after the global financial crisis.

Better alternatives need to be found. These include the promotion of green technology and the circular economy through research and subsidies and, where appropriate, regulation. The aim should be to harness the market economy to serve environmental policy objectives. In this case, they may be in line with the acceleration of economic growth. It would be particularly important to achieve effective international cooperation, as CO₂ emissions are global externalities.

Emissions trading is the EU's main means of combating global warming. Emissions covered by them have fallen by more than a third from 2007 to 2019. These reductions are the result of reduced use of fossil fuels such as coal in electricity generation. ⁴¹ Emissions trading will continue to play an important role, and the EU should work to make more efficient use of emissions trading. The problem in the near future is that significant amounts of allowances will not be used, and

⁴¹ Markku Ollikainen's memorandum “The impact of the corona crisis on emissions” (Appendix 6):
<http://urn.fi/URN:ISBN:978-952-287-898-4>

that the price of emission permits is too low for climate policy objectives.

In Finland, low prices slow down the reduction of peat energy use in particular, which would be necessary for climate reasons and to improve biodiversity and the condition of water bodies. Other economic instruments, such as taxes, should also be used to promote environmental policy objectives. It would be worth getting rid of harmful tax subsidies, which, for example, favor not only transport but also our biggest source of emissions, peat burning. At the same time, there is a need to be concerned about the revenue-sharing effects of environmental taxes. Where necessary, efforts must be made to compensate the population groups affected by income transfers or other tax adjustments.

Environmental policy provides targets for investments to increase the building stock and the energy efficiency of **transport 42, which will be returned to in Chapter 8. In addition, investment in research can contribute to both** environmental protection and business using new technologies. Finland has a fairly strong business in this field and good opportunities for its development.

7.3 The challenge for the welfare state: whether for generations agreement between fair?

It has sometimes been somewhat joking that Finland has a wonderful welfare state but a very modest national economy. Both parts of the sentence have a stern. The Finnish welfare state relies on widely accepted assessments among citizens, such as community spirit and equality. In Finland, the public authorities strive to provide family and education policies that benefit all citizens, as well as social security and health care. The benefits and services of the welfare state are highly valued by citizens.

The problem is that public finances are not in a sustainable position. In the post-interest rate crisis, the only emphasis is that realistically obtainable tax revenues, with the prevailing structures, are not enough to deliver on all the promises of the welfare state. After the crisis, many social problems have become even more difficult, and the authorities' ability to serve is being tested (see Juho Saari's memorandum attached).⁴³

More rehabilitative work, social rehabilitation and low-threshold services are needed. NGOs are important in many ways and their

⁴² Markku Ollikainen's memorandum "Corona, climate action and green regeneration" (Appendix 6):

<http://urn.fi/URN:ISBN:978-952-287-898-4>

⁴³ Juho Saari's memorandum (Appendix 9): <http://urn.fi/URN:ISBN:978-952-287-898-4>

operating conditions must be taken care of when financing becomes more difficult (decrease in Veikkaus Oy's income). At the same time, both war and war reform should be taken forward. Securing welfare state funding would seem to require either tax tightening or public spending cuts. However, the contradiction can be mitigated by increasing the productivity of public service production and raising the employment rate.

The Finnish welfare state and especially social security are based on a "silent" agreement between the generations. According to it, the active generation takes care of children and the elderly on the assumption that the next generation will take care of them as they reach old age. In agricultural society, this was handled by a large family. In today's society, this is done by the active population paying the taxes needed to fund pensions for families with children and the elderly, as well as care and nursing services. The system can be seen as a cost-effective way to provide the security that members of society need.

The intergenerational agreement was already being tested before the current crisis. In particular, the change in the age structure of the Finnish population is leading to the fact that tax revenues at current fees and tax rates are not sufficient to cover pensions and other public expenditure. The aging of the population is still partly due to the aging of large age groups born after the war. Other factors that are having an increasingly strong impact are the long-lasting increase in life expectancy and the lower birth rates in recent years. In this perspective, young and future age groups are net contributors to welfare states, while now older people have been significant net recipients in relation to public finances over their life cycle. Of course, the old generations also leave young people with a lot of capital in the form of the infrastructure of society ("infrastructure") and private heritage. On the other hand, in addition to higher public debt and budgetary problems, young people are also facing a qualitatively weaker environment in many respects, as well as the growing problem of global warming. In the light of these factors, one may ask whether the intergenerational agreement is becoming unfair to young age groups?

The coronary crisis affects different generations in very different ways. The main aim of the restrictive measures has been to protect the elderly population in particular from infections that are dangerous for this risk group. The epidemic and the restrictive measures decided to prevent it from spreading will have significant and likely long-term adverse effects on the economy. These weaken the long-term employment and income prospects of the active population and young people. From this point of view, it has been suggested that removing restrictions and thus improving the conditions for economic activity would be in the interests of young people. At the same time, easing restrictions could increase mortality in the elderly. Thus

In this respect, the fight against the crisis has to weigh the advantages and disadvantages of different generations. 44

The legacy of the crisis will also be a much higher level of public debt passed on as a legacy to younger generations. The effects of the corona crisis provide additional impetus to the debate on whether the burden on young people and future generations is becoming too great. In part, this can be seen as a question of fairness, in part, in terms of economic efficiency and growth-orientation.

Even if the problem were acknowledged, the burden-sharing between the generations would be difficult to correct for both legal and political reasons. Paid pensions are protected by the Constitution by the law of ownership, so they cannot be intervened even if the pension payment pressures increase. An even more important factor is that the elderly are a large and actively participating group of voters. Young people are a smaller group and more passive voters. Therefore, the interests of older people are strongly present in the political debate, especially during election times. There is a danger that young people and families with children will be left behind in politics and budgeting.

The burden-sharing between the generations is by no means just or even primarily about justice. More importantly, children and young people are key to economic growth and the future. As noted above, proactive investment in families with children is likely to increase economic performance and strengthen public finances. Investment in human capital in the form of various levels of education is a key factor in the competitiveness of the economy. Securing the care of the elderly is a moral obligation of society, but it is not as much an investment in the future as it is in investing in the human capital of children and young people.

What can be done if the concern about the overburdening of young people is accepted? The aspect supports the above-mentioned investment in children's policy and the education of young people. In addition, one may ask whether the tax burden needed to cover the expenditure of older people could be borne to a greater extent by the able-bodied older population who bear it. The much-criticized increased tax on high-income pensioners (the "ramp tax") is defensible in this respect: it lightens the payment burden on young people and does little to reduce incentives to work. The increase in property tax can also be justified in this respect: it affects the elderly much more strongly than the young. A property tax is also a good tax in the sense that it is difficult to circumvent and has no negative incentive effects.

44 Acemoglu et al. (2020).

All in all, care must be taken to invest in the education and training of children and young people, despite society's financial problems. A good society cares for its children both for moral reasons and because this is a prerequisite for favorable social development.

7.4 The role of the state is important but the crisis is forcing to consider boundaries

In a very short time, during this spring, the role of the state has expanded significantly. In order to slow down the spread of the epidemic, government decisions have addressed business and movement and meeting freedoms, granted various support packages to entrepreneurs and companies, and expanded the coverage of unemployment security. There have been strong grounds for these decisions in the context of the crisis.

At the same time, the welfare society or state has shown its strength. In Finland, employees are comprehensively covered by unemployment insurance. The redundancy system reduces the cost burden on companies and maintains the employee's relationship with their employer. Even in other Nordic countries, similar systems have urgently needed to be developed to mitigate the effects of the current crisis. In the United States, poor social security for workers forces a difficult choice: the economy should be opened up to secure workers' earning opportunities, but deregulation threatens to lead to a rapid increase in infections.

On the other hand, the expansion of the role of the state is reflected in a sharp increase in government indebtedness, which should allow it to be gradually reduced. There is also a risk that government interventions in business will lead to skewed price formation and misallocation of resources. Overall, the line between the state and the private sector has changed and the division of responsibilities has blurred, at least temporarily. The question is whether there is a return to the previous division of labor - or is a new kind of division of responsibilities desirable?

The state and the private sector have different roles in the economy, which are strongly related to the so-called externalities (ie effects on parties other than the counterparty to a given transaction). Economics textbooks often assume that public intervention in the economy is needed when economic activities have significant externalities. In reality, however, it is the case that companies internalize many externalities through their activities. This is, in fact, the reason why companies exist (in addition to the market).

There is a great need to manage or internalize externalities, and companies are able to accomplish the task in many ways. Companies do not only compete on prices, employee contract terms, product range, etc. They also compete on different business models, which coordinate activities in different ways and internalize effects that are difficult to manage in the market. 45

However, there are important societal factors that are difficult for private companies to take into account. These are often externalities between citizens or customers. There are strong arguments for public authorities to have responsibility for, for example, health and basic education or urban planning and consumer protection. These activities have extensive income distribution and externalities that are not adequately taken into account in the operations of a private company.

The role of the state is to carry out those socially important tasks that cannot be performed by private companies. In this case, a narrowly understood efficiency is not a reasonable criterion for evaluating performance. The advantage of public power is precisely that it is not forced to think only of the effectiveness of action in the narrow sense. It needs to consider the objectives of the action more broadly, often emphasizing conflicting aspects. It is not appropriate to emphasize the pursuit of profit by a private company; perhaps the paradoxical advantage of public action is that it does not have to maximize profits. Therefore, comparisons between private companies and state-owned companies or public authorities are often misleading. The lack of cost-effectiveness of operations is not a weakness,

This is not an obstacle to the privatization of some activities or to the use of competitive private sector activities in the performance of public tasks, but the framework for outsourcing needs to be carefully considered. The private sector is typically quicker to respond to new technological opportunities, as there is a strong incentive for private actors to seek new efficient approaches quickly because of the profit motive. It is also easier for private sector organizations to reshape the faith than for public sector entities. This also promotes the use of new technologies.

Public sector management is quite different from that of a company. The powers of the company's executive management are quite broad, as long as the support of the owners is secured. The company's behavior is controlled by consumers and competitors offering other products, as well as by employees with alternatives. If alternatives are available and customers have

45 Andersen et al. : The Nordic Model (Chapter 8), ETLA 2007.

freedom of the market, competition can usually be expected to lead to an effective outcome. The cornerstones of a market economy are freedom of choice and the resulting competition, as well as the right to property.

In the case of the state, democratic legitimacy requires that the government enjoy the trust of Parliament and, through it, of the citizens. The use of power often requires compromises that are difficult to reconcile. Achieving them can be time consuming and there is no guarantee that the end result will be very satisfactory. Loud criticism is part of the rules of democracy. However, few want alternatives to democracy.

Overall, three conclusions should be underlined. First, public authorities and private companies have different roles. Public and private action are not alternatives to each other but complement each other. The state determines the framework for private activity and takes care of those tasks where externalities are of such a nature that it is difficult to take them into account in the activities of companies.

Second, it is difficult to achieve cost-effectiveness in public affairs. In many cases, efficiency can be improved by leveraging technology. Instead, because of the broad or multidimensional objective function, it is difficult to learn from the activities of private companies. Profit maximization is not a valid guideline for public service production.

Third, public action is expensive or requires a lot of resources, which is why public action should only be relied upon when the need for it is particularly great. This aspect should be taken into account when considering the demarcation of private and public activities in a context of rapid government indebtedness.

The advantages of a market economy are that it has strong incentives for the parties to adapt to changing circumstances. The situation is different in a society with a large welfare state. Comprehensive social security protects citizens from the shocks caused by the crisis by taking advantage of the state's creditworthiness. Under security conditions, adaptation to new conditions at the level of the whole economy may not occur spontaneously. In the conditions of a large welfare state, there are particularly high demands on the political decision-making system.

The deteriorating balance of public finances due to the interest rate crisis is forcing us to think about the role of public authorities. Existing tasks would require a significantly higher tax burden if the efficiency of service production does not increase significantly or the capacity created by the private sector increases.

On the other hand, the level of taxation in Finland is high, one of the top in the world, although not quite the highest. This makes it more difficult to tighten taxation, especially in so far as

the tax base moves easily across national borders. In addition, a significant part of taxation is spent on work in one way or another. Its tax tightening is unattractive when, on the other hand, low employment rates are one of the reasons for poor public finances. On the other hand, there are gaps in tax bases and there are also forms of taxation that are less detrimental to economic activity than average. It therefore seems obvious that, insofar as efforts are being made to solve the welfare problem of the welfare state by tightening taxation, attention should be paid to these low-distorting taxes and gaps in the tax base. 46

The size of the public sector and thus also the level of the tax burden are, of course, a matter of political choice. However, it is unbelievable that the fiscal sustainability gap, which is exacerbated by the crisis, could be addressed by tightening taxation, although we believe that this is one that needs to be addressed.

This also forces us to consider the limits of public responsibility: what matters are the responsibility of the state and other parts of the public sector and to what extent. From an economic point of view, an important criterion is where there is no good alternative to public accountability.

This border pain will, of course, be alleviated if the size of the private sector can be increased through higher employment and productivity, as well as by increasing the efficiency of public service production. Unfortunately, this too is anything but easy.

46 In the attached memorandum, Timo Viherkenttä examines various possibilities for developing taxation (Appendix 12): <http://urn.fi/URN:ISBN:978-952-287-898-4>

8 Economic policy strategy

The economic policy of the interest rate crisis can be divided into three phases: (1) minimizing damage while getting the epidemic under control, (2) demand-side fiscal policy after deregulation, and (3) repairing economic damage and stabilizing public finances after the crisis. The third of these is the most difficult, as it requires a “sharing of scarcity” by cutting spending and raising taxes, as well as implementing some unpopular structural reforms. The scale is demanding but not overwhelming, and the experience of the crisis can help to reach a consensus on how to take the necessary action.

8.1 Starting point and three steps

As a starting point for the economic strategy, we take control of the epidemic so that large-scale economic austerity measures can be phased out. This requires effective testing, tracing, isolation and maintenance activities, as well as the use of protective equipment and the adoption of safe practices in the workplace and in other day-to-day interactions. The resources devoted to these various hedging measures are clearly less than the losses that result from long-standing large-scale containment and fear. The lifting of restrictions can only proceed as long as protection measures are sufficient to control the epidemic. Existing safeguards need to be strengthened to allow for significant deregulation.

The next stages of economic policy can be conceptually divided into three parts, although over time they overlap.

At the stage of getting the epidemic under control Whereas the primary task of economic policy is to seek to minimize damage, necessary for economic reasons and the fear of the epidemic. This concerns, above all, the ability of companies and entrepreneurs to survive, to “hibernate” over the acute phase of the epidemic, and to avoid layoffs and redundancies severely undermining people’s attachment to work. At this stage, it is essential not only the speed and adequacy of support measures, but also their effective targeting, ie the avoidance of waste and distortions caused by support measures. This phase is now underway.

In the second phase, when restrictive measures on domestic activity can be eased, the focus of economic policy will shift to demand-side fiscal measures. This means decision-based resuscitation. Proper timing, sizing and targeting are essential for these activities. The sizing is affected not only by the initial situation, but also by an assessment of what kind of permanent changes the crisis will cause to the Finnish economy.

The third stage of economic policy concerns the repair of damage to the economy, incl. in particular the consolidation of public finances. If the first two phases of the crisis remain short and there is no significant long-term damage to the economy and society at large, the task is mainly to deal with the increased public debt created by the crisis. This requires a somewhat stronger fiscal surplus than was previously reasonable to pursue. As such, this is not a very demanding task if the real interest rate remains low for a long time, as should be assumed. It will help if Finland is able to maintain its credibility as a responsible manager of public finances. Economic policy is not easy even in this situation, when there has been a significant sustainability deficit in public finances even before the crisis. However, the additional burden is small and the biggest problem remains that in the context of higher debt burdens, the ability of public finances to buffer future economic crises is weaker. The economy will remain more vulnerable.

If, on the other hand, the crisis weakens economic performance, potential output and, in particular, reduces the share of the employed in the population in the longer term, Finland's ability to take care of its promise of well-being to its citizens will clearly weaken before the crisis. This is reflected in a long-term increase in government deficits and a clear increase in the already significant sustainability gap, as well as the resulting pressure to weaken public services and safety nets.

On the other hand, in the event of such a protracted crisis, the need for public action to ensure well-being will increase, at least for some time: long-term isolation measures, unemployment and declining primary health care and social support will pose problems that require resources. The role of economic policy in such a situation is much more demanding: significant adjustment measures are needed and, on the other hand, structural measures are needed to reduce the need for adjustment. The latter refer to measures to keep the employment rate at a sustainably high level and to improve labor productivity.

The magnitude and consequences of the economic crisis are still unclear. However, we think it is realistic to assume that Finland's economic growth will weaken significantly for a longer period of time and that the risk of a new global financial crisis and a deep recession in the euro area is also significant. Under such conditions, Finland's public debt-to-GDP ratio will continue to grow

throughout the 2020s and exceeds 100%. Because of this **economic policy needs, in addition to stimulus measures, a plan of measures to adjust public finances and reduce the need for adjustment through structural reforms**. The greater the debt burden in the crisis management and recovery phases, the greater the need for such action.

It makes sense to spread the adjustment measures over several years, so that their impact is only visible over time. Similarly, the best measures to improve employment and productivity will not be fully visible until years from now. This results in a problem of policy credibility, which is all the more difficult the greater the debt-increasing stimulus effort.

For this reason, it is important that, while deciding on important solutions for economic recovery, the objectives of adjustment and employment and productivity-enhancing policies are also set. Credibility also requires that these policies be clarified and that implementation begin as soon as possible during the current term.

8.2 Supporting businesses in the protracted crisis conditions

Supporting the business environment has been a key part of economic policy in the early stages of the crisis. The majority of the support has been in various forms of liquidity facilitation. So far, direct support has been granted mainly through Business Finland, ELY centers and municipalities. In addition, Industry Investment has launched a private equity program and the state has announced that it will recapitalize its mainly owned Finnair. It has also been decided to create a separate support program for restaurants.

The implemented support solutions have been useful. However, we do not think that they are enough. What is needed is a more general system that quickly supports the profitability of companies in all industries. The purpose of the aid is to prevent bankruptcies by distributing temporary direct aid to the companies most affected by the corona epidemic. According to the proposal, the aid would be targeted at covering costs that are difficult for small and medium-sized enterprises to adapt without going out of business. The support would also be based in part on the wage costs of companies and thus seek to maintain employment during the crisis. Solutions in this direction are being sought.

If the crisis eases in the coming months, temporary support measures can be abandoned, at least mainly by the autumn, without the need for new measures. Rather, as part of the future adjustment of public finances, ways must be sought to reduce business subsidies.

As the crisis continues, the situation will change. The need for support will not disappear, but large-scale support will become too expensive. The business community is forced to adapt to the changed situation. The authorities are obliged to assess which companies' bankruptcies cause the greatest losses to the rest of society through lost production or employment, and to target society's support at these critical companies. The situation of companies can also be difficult when operations are restarted, and speeding up this phase may require new support models.

The support model proposed by the working group is also not suitable for supporting large companies. In companies with more than 100 employees, company-specific support should be substantial to be effective. In this case, for reasons of cost-effectiveness, it is important to assess the need for support on a company-by-company basis. Due to the limited number of such companies, there is also a better chance of such a company-specific assessment in practice.

Medium-sized companies (100-250) are a particularly important group. There are traditionally too few of these companies in Finland. At the same time, they have a number of companies with the potential to grow into major international companies. Some of these companies make money from the market. Industry Investment is also preparing a program to recapitalize companies of this size.

The task force does not have a model to support medium-sized industrial companies. Also, only one model may not be suitable to support this set of companies. The need for support should be addressed on a sectoral basis. The need for support can also be very different for growth companies seeking to enter the international market than for established domestic companies. This requires more in-depth reflection. The key problem is uncertainty about the duration of the crisis. However, the duration of the crisis is of great importance to which companies are in difficulty.

In order to be able to identify the support needs of such companies, we propose the creation of a new group of experts focusing on this issue. The task of the group would be to consider how and using what instruments and bodies to ensure the preservation of valuable human and organizational capital through the crisis.

8.3 Fiscal stimulus crisis acute after the stage

As noted above (Chapter 6), there is a need for fiscal stimulus as the crisis eases. However, the time for recovery is not now, but only when the main constraints on economic activity have been removed and fears of an epidemic begin to ease. Assuming these conditions are met over the course of this year, the 2021 budget should be stimulative. Some stimulus measures may be considered as early as the end of the summer, provided that sufficient progress is made in removing restrictions. In any case, supporting municipalities by increasing state aid is already necessary this year due to both the reduction of municipal tax collection and the growth of service needs.

The fiscal stimulus should be reasonably large, at least a couple of per cent of GDP. It is essential that the recovery is targeted in such a way as to support both short-term growth in domestic demand and output and long-term economic performance. This is not in favor of a general reduction in taxation or an increase in income transfers and benefits.

The most promising opportunities for simultaneously strengthening demand and long-term growth can be found in investments in society's infrastructure, "infrastructure". This can be road or rail projects or other public construction. Launching major rail projects takes time to such an extent that they are not suitable for a fast-start recovery. Rehabilitation of the road network is a more useful target in this respect.

The construction sector is an important employer, directly and indirectly, and may soon face difficulties. The state can use various means to support housing construction in order to alleviate the housing shortage in growth centers. Temporary support for renovation construction could also increase employment in the construction sector. We have relatively good experiences with temporary renovation support for both the 1990s and 2009-2010. Early improvement of public space renovation projects, provided that they are sufficiently advanced in design, is also a natural stimulus measure.

To support the prospects for construction, legislative changes could also be considered, such as allowing private zoning to speed up zoning. The preparation of formulas for decision-making must, of course, be the responsibility of the authorities. Further change of use of buildings could be made more flexible, which in the Helsinki Metropolitan Area and other growth centers could trigger the conversion of vacant office space for residential purposes. It is reasonable to assume that the increase in teleworking brought about by the crisis will remain partly permanent. This reduces the need for office space and thus frees up these spaces for residential use. This opportunity should be seized.

Investments in the promotion of environmental and climate policies and in increasing energy efficiency are a natural target for revitalization, as there is a great need for these in any case. It is essential that the selected “green recovery” measures are effective and can be launched in such a way that they support economic activity quickly enough. Both employment and a clean environment can be supported e.g. investing in energy efficiency in housing and heating **renovations in buildings, as well as zero-emission transport infrastructure.**⁴⁷ Other parts of the green stimulus package can be found in municipal rail investments and the promotion of renewable energy, as well as network investments to improve the distribution of electricity. Overall, green regeneration offers opportunities for both promoting environmental policy and supporting employment.

Wage support has been used in Finland mainly to promote the employment of the long-term unemployed and young people. In the current situation, a temporary extension of the use of wage subsidies could be considered in order to accelerate the decline in high unemployment. Tax cuts are a less effective way of stimulating demand. However, if necessary, private consumption could be supported fairly quickly by a temporary reduction in the VAT rate. The rebate could somewhat bring forward the growth of private consumption. The measure must be temporary, but it could work just as well, especially if, at the same time, it is stated that a clear tightening of VAT will later be part of a policy of fiscal consolidation.

There are also needs to increase fixed expenditure, the timing of which is good to take into account the cyclical perspective. This applies, for example, to funding for child policy, education and research, but also to risk finance for start-up growth companies. Used well, such investments have a significant impact on longer-term growth through both productivity and improved employment conditions. Investments in such a new creation reinforce faith in the future, the importance of which should not be underestimated. To the extent that more resources can be allocated to these, and plans for justified increases are in place, it is a good idea to schedule additional investment as early as 2021.

In principle, the recovery is best financed by borrowing. In the government program, the sale of state assets has been intended to finance the so-called non-recurring expenses. In the face of falling stock prices and probably lower and lower interest rates, stock sales do not seem to make sense in the near future. Of course, this does not mean that the state should refrain from selling shares if there are otherwise good grounds for doing so in terms of the management of state assets and the focus of state functions.

⁴⁷ Markku Ollikainen “Corona, climate action and green regeneration” (Appendix 6):
<http://urn.fi/URN:ISBN:978-952-287-898-4>

8.4 Fiscal adjustment and structural policy

The crisis will impoverish Finland and significantly weaken Finland's public finances in the medium term. At the same time, the sustainability gap in public finances, driven by an aging population, continues to grow. It is therefore necessary to adjust public finances to match the carrying capacity of the national economy by far more than was necessary before the crisis. Adjustment means reducing spending and / or tightening taxation.

The magnitude of the need for adjustment is uncertain. However, with unchanged economic structures, it is justified to set its minimum size at 3-4% of GDP. This would probably be enough to stabilize the public debt-to-GDP ratio below 90% in the 2020s and, with good luck, bring it down slightly. The adjustment would also reduce the long-term sustainability gap by a corresponding amount, even if it was not sufficient to eliminate it. Even after such an adjustment, public finances would be clearly more vulnerable to future blind people.

The need for adjustment will decrease if the carrying capacity of the economy can be increased, ie if the share of the working population in the population increases and labor productivity improves. From the point of view of public finances, the employment rate and the efficiency of publicly funded service production are particularly important. This would mean that the economy will sustainably achieve a better growth trajectory than the "lost decade" scenario underlying our economic policy analysis. This is certainly a better option than adjusting by cutting spending or raising taxes.

However, the challenge of such a structural policy is that, at best, the impact of measures is slow and it is difficult to accurately assess the impact in advance. Therefore, it is also possible that unrealistic structural policy plans can be used as an excuse to avoid unpopular spending cuts or tax increases. For these reasons, it is important that to improve the carrying capacity of the economy, incl. measures to improve public sector efficiency are clearly outlined and are being implemented swiftly.

Determining the optimal start time and pace of adjustment is difficult. Adjustment should not start so sharply as to stifle recovery from the economic downturn caused by the crisis. On the other hand, postponing the adjustment will increase the debt burden all the time and thus the future need for adjustment and Finland's vulnerability to new blind people. We believe that a great deal of emphasis must be placed on the latter. For this reason, the adjustment should start in 2023 at the latest.

Precise guidelines on the scale and timing of the adjustment, of course also on the content, require careful consideration, where, in addition to economic efficiency, equity considerations are important. Reasonable solutions will, of course, depend on the achievement of credible structural reforms that reduce the need for adjustment.

8.5 Policy choices demanding

Both the adjustment of public finances themselves and structural policies aimed at raising employment rates to sustainably high levels and strengthening productivity growth are in many ways difficult.

First, as has already been shown above, we do not know with certainty what the need for adjustment and its most appropriate timing will ultimately be. Economic development is very uncertain with any policy implemented in Finland. Uncertainty applies not only in the coming years but also in the medium and long term. For this reason, the adjustment program must include options for correction, which should not, however, be such as to call into question the credibility of the program.

Secondly, we do not know very well how different measures will affect employment and productivity over time. There is convincing research evidence on only some of the possible policy actions. Recourse to such measures alone is clearly not enough to deliver significant results, be it in terms of employment or productivity. It must also be possible to decide on measures based on uncertain effects; indecision is also a decision.

Thirdly, environmental issues and, above all, climate change place greater demands on the way the economy is steered on a sustainable path. There is an obvious danger that in the economic and welfare crisis, too little emphasis will be placed on these issues that are important for longer-term well-being.

Fourth, despite its uncertainty, the scale of the adjustment required means that small filings are not enough. On the expenditure side, there is a need to critically assess all major expenditure items, such as social security, health, education and business support. Public sector revenue, on the other hand, consists mainly of income and VAT taxes and social security contributions, incl. pension contributions. None of these adjustments are easy. The problem is compounded by **the fact that for almost all items of expenditure there is at least short-term expenditure *increase* pressures. Similarly, there is more pressure to support activity and employment *reduce* some taxes, mainly labor-intensive. Such increases in expenditure and reductions in taxes must, of course, be offset elsewhere.**

Both the crisis itself and adjustment measures and structural policies affect different people in very different ways. A special feature of the corona crisis is that older people in particular will benefit from protectionist measures, while the economic and partly social burden will be borne mainly by younger age groups. Emphasizing the interests of different people is a key part of economic policy-making. This is always the case in politics, but the importance of this is now emphasized when it comes to the great need for change and, as a rule, the “sharing of scarcity” instead of new things that immediately increase well-being.

However, the experience of a crisis can make it easier

On the other hand, the experience of the crisis may also make it easier to find consensus on adjustment and structural policy issues.

The great threat to all has put many previous controversies into a new perspective; perhaps they are not as important as previously thought. A new kind of cooperation has emerged in the face of necessity. Examples of this are the ability of social partners to quickly agree on facilitating redundancies and strengthening unemployment security, on the one hand, and the broad consensus of government and opposition parties on the implementation of crisis management measures, on the other. Experience of effective co-operation increases the preconditions for finding consensus also in the future.

The crisis may also change people’s values and attitudes in a way that can facilitate the implementation of necessary reforms. When forced to make a radical change in movement, consumption, and social interaction, there may be a greater willingness to accept other changes that are perceived as necessary.

With the crisis, the value of research data seems to have increased, as has the scientific understanding that the best information is uncertain. If these perceptions remain valid, people’s willingness to accept research-based solutions will increase even when they conflict with their own preconceptions. Similarly, there may be a growing awareness that it makes sense to change policy as knowledge accumulates. Repair shops are not interpreted as questionable “jacket turning”, as is often the case.

In any case, when the need to adjust public finances is high, it is realistic to assume that all the main solutions are needed: spending cuts, tax cuts and measures to support employment and productivity. Recognition of this premise, on the other hand, can facilitate the formulation of acceptable policies: the burden of adaptation may be easier to share when it is clear that everyone needs to be involved in some way.

The means must be sought mainly from among the things known

The range of measures that can, in principle, be used to promote sustainable employment growth and productivity growth has not changed with the crisis, nor has the uncertainty surrounding the various measures. Similarly, information on how different spending cuts and tax increases treat different groups of people is similar to the past.

What has changed is the growing need to reconcile public finances with the sustainability of the national economy. This also means an increased need to be able to decide on policies rather than postponing decision-making. When the problem is big and gets worse over time, you need to be able to make decisions with the understanding that there may soon be a need to change them as more information accumulates.

There is no shortage of proposals for measures to improve economic efficiency and the sustainability of public finances. The Ministry of Finance, the Bank of Finland, the OECD, the IMF, the EU Commission and the Economic Policy Review Council, among others, have repeatedly put forward various proposals aimed at raising employment rates, increasing productivity and, in particular, increasing the efficiency of the public sector.

The policy package is about drawing up a big 'pain package', both for spending and tax decisions and for structural policy measures. A good result requires careful preparation, where economic efficiency is just one aspect. Equally important is that the whole is perceived as fair. Political judgment is needed here.

For these reasons, we are not trying to make any overall proposal for the necessary action. However, we would like to draw attention to three areas because the emerging crisis emphasizes the importance of these policies in different ways (Box). Of course, these areas do not cover all important policy areas, and highlighting them does not mean that other issues, such as the need to increase the efficiency of public service production, can be ignored.

Given the complexity of the pain package, the government should establish as clear a process as possible, setting objectives at an early stage for the various areas (expenditure, taxes, structural objectives) and how and when the more precise guidelines will be prepared and implemented. This process should be under the close guidance of the government while ensuring that it utilizes the best available research data.

Possible policies in three areas

Developing the functioning of the labor market

The increase in the employment rate to the Nordic level is even more important due to the state of public finances in order to secure the financial base of the welfare state. Therefore, measures are clearly needed to strengthen labor supply and reduce structural unemployment. In addition, efforts must be made to steer labor market mechanisms in such a way that they better support the maintenance of employment as close as possible to its potential when the economy is facing various shocks at company level and at the level of the economy as a whole. Things to consider could be:

- removing incentives to withdraw from the labor market before retirement age and better encouraging them to enter the labor market more quickly;
- modifying the unemployment security system and the income support system in a way that is more conducive to taking up work, while taking into account that the need for security is greater in poor economic conditions than in good ones;
- enhancing active labor market policies so that they are more clearly targeted at those at high risk of being permanently excluded from working life;
- reducing barriers to the entry of foreign workers and strengthening measures to attract skilled workers from inside and outside the EU;
- to safeguard the competitiveness of the open sector. The stabilization of the Finnish model in wage formation, e.g. strengthening the institutions that support it
- promoting local bargaining and employee participation, so that greater wage flexibility supports the maintenance of a high level of employment in the face of various economic shocks;

Education and innovation policy

A strong innovation ecosystem has emerged in Finland, the good functioning of which is essential for the ability to take advantage of new opportunities. However, the crisis threatens the functioning of the ecosystem. Ensuring the adequacy of risk finance therefore requires special attention. Despite the tightness of public finances, more investment is needed more broadly in strengthening the skills level of the population and in research and development. Due to the funding constraint, tax funding should be targeted especially at things where there is no good alternative. At the same time, greater financial efficiency must be required of the operators who rely on this funding. In other respects, it would be good to increase private financial responsibility. Things to consider could be:

- increasing the resources for early childhood education and basic education and raising the compulsory school age so that secondary education can be ensured for all;
- increase in university starting points
- the introduction of moderate tuition fees in higher education and the adjustment of the student aid system as required;
- changing the way adult education operates and resources so that it is more targeted at the low-skilled
- Increasing research and development and innovation funding for business development and the so-called reduction of maintenance aid

tax policy

When it is necessary to tighten taxation as part of the adjustment, the efficiency of the tax structure is a more important issue than before. In terms of employment development, tightening labor taxation is the most harmful and should be avoided. On the other hand, tax changes justify paying more attention to the fairness of the treatment of people of different generations. Things to consider could include:

- a clear increase in the share of property taxes in taxation, which only slightly distort economic activity and focus on the wealthier and older population;
- reducing the tax base gaps in corporate taxation by reducing, for example, the tax advantage for unlisted companies.
- further tightening of taxation on fossil fuels
- raising VAT to generate sufficient tax revenue, by reducing reduced rates rather than the general level;

We must prepare for an inferior option

The need for economic adjustment discussed above is based on the assumption that the global economy will slowly begin to recover towards the end of the year and that the euro area in particular will avoid a new financial and sovereign debt crisis. In that case, Finland will also be able to grow modestly from next year.

However, there is no guarantee that this will happen. In many European countries, the economic downturn this year is forecast to be worse than in Finland. In addition, it is in the same countries that the state is already heavily indebted and the banking system is worse off than in Finland. The functioning of the political system is also questionable. Past episodes of crisis show that the cycle of mistrust in vulnerable economies can deepen rapidly. Among such countries, Italy is also so large that its collapse will significantly weaken the euro area economy as a whole. The earth is too big to be allowed to fall but also too big to be saved.

If the situation in Europe turns into an acute crisis, the crisis will be felt in Finland through many channels: a dive in export markets, a disruption in financial intermediation, a political crisis in the euro area and the EU. In such circumstances, many things need to be thought of in a whole new way. The "pain package" comes with a whole new kind of difficulty factor. Even without the euro crisis, the situation could be severely complicated if a strong new wave emerges in the epidemic, for example next winter.

Of course, the development can also be a positive surprise. However, it is much easier to live with this "risk". Getting rid of nasty things is never difficult.

However, Finland has survived earlier, when it has been forced

In international comparisons, Finland has been found to be one of the most functioning societies in the world. Citizens trust each other and state institutions. The administration operates efficiently and equitably. Finland is listed high as an information and innovation society.

We have evidence of the ability to cope with the big blind, and while mistakes have been made, efforts have been made to learn from them. The integration of society and the economic recovery from the Civil War, as well as the survival of the Second World War and the subsequent rise to a welfare state comparable to other Nordic countries, are further examples of the rise from very difficult starting points.

The recession of the 1990s was exceptionally deep by any measure. However, the economy quickly grew strongly and Finland developed into a model country for an innovative knowledge-based economy. On the other hand, we only experienced slow-melting long-term unemployment, and the income development of those who entered the labor market during the recession has been left with a long-term drag. Income disparities widened, although they remained small by international standards.

A common feature of both the wars and the recession of the 1990s is the depth of the crisis. It was somewhat indisputable that major changes were forced in politics. The long recession that began in 2008 was different in this respect. Financial markets did not force the most dramatic policy changes, and crisis awareness did not arise by itself. Based on the experience of the 1990s, much attention was paid to combating unemployment and growing income inequalities. The results were quite good in this respect, but on the other hand the economy adapted to the shocks slowly and production losses and the deterioration of public finances became large.

The corona crisis is a dramatic deviation from normal, even more so than the recession of the 1990s for its root cause. Political decision-makers have had to resort to very exceptional measures to control the epidemic and to protect businesses and citizens financially. There has been widespread public support for these actions. Individuals, companies and other communities have been proactive and have shown great innovation to solve problems. In terms of getting the epidemic under control, the results are excellent. The next steps are not as easy. However, in the light of past achievements, success should not be overwhelming.

Attachments

The annexes are memoranda requested by the working group from various experts to support the group's work. The views expressed in the memos are those of the authors and have not been commented on by the group.

Appendix 1: Ali-Yrkkö and Kuusi

Appendix 2: Baldwin

Appendix 3: Baldwin (fin)

Appendix 4: Kaitila and Lehmus

Appendix 5: Mäki-Fränti et al.

Annex 6: Relevant

Appendix 7: Ollila

Appendix 8: The North

Annex 9: Islands

Appendix 10: Bank of Finland

Annex 11: Working Group

Annex 12: Green field

Appendix 13: VM1

Annex 14: VM2

Attachments at <http://urn.fi/URN:ISBN:978-952-287-898-4>

SNELLMANINKATU 1, HELSINKI
PL 23, 00023 VALTIONEUVOSTO
valtioneuvosto.fi
julkaisut.valtioneuvosto.fi

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